U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
PB-294 639

Legal Aspects of Flood Plain Management

North Carolina Water Resources Research Inst, Raleigh

Prepared for

Office of Water Research and Technology, Washington, DC

Feb 79

PB 294639
REPORT NO. 137

LEGAL ASPECTS OF FLOOD PLAIN MANAGEMENT

by

WILLIAM A. CAMPBELL and MILTON S. HEATH, JR.
Institute of Government
University of North Carolina
Chapel Hill, N. C.

February 1979

Water Resources Research Institute
OF THE UNIVERSITY OF NORTH CAROLINA

REPRODUCED BY
NATIONAL TECHNICAL
INFORMATION SERVICE
U. S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

BIBLIOGRAPHIC INFORMATION

PB-294 639

Legal Aspects of Flood Plain Management,

Feb 79

William A. Campbell, and Milton S. Health, Jr.

PERFORMER: North Carolina Water Resources Research Inst., Raleigh.
UNC-WRRI-79-137
Contract DI-14-34-0001-8104

Prepared in cooperation with North Carolina Univ. at Chapel Hill. Inst. of Government.

The federal flood insurance program has made it possible for landowners in flood hazard areas to obtain subsidized insurance protection against flood damages. As a condition of this protection, however, the local governments in which flood-prone land is located must adopt various restrictions on the use of land in the floodway and flood hazard areas. The North Carolina legislative center piece for authorizing local flood plain regulations is the Floodway Act. This act is deficient both in terminology and in scope of coverage. To remedy these deficiencies it is recommended that the Act's coverage be broadened to include flood hazard areas beyond the floodway, to include areas of coastal flooding, and to delete the uses permitted as of right in the floodway. State property must meet the federal requirements in order for the state to obtain insurance or to qualify as a self insurer. Statutory changes are suggested to meet these needs.

KEYWORDS: *Legislation, *Flood plains, *North Carolina, *Flood plain insurance.

Available from the National Technical Information Service, Springfield, Va. 22161

PRICE CODE: PC A04/MF A01

SELECTED WATER RESOURCES ABSTRACTS
INPUT TRANSACTION FORM

1. Report No.
2.
3. Accession No. W 79-06049

4. Title
Legal Aspects of Flood Plain Management, ~~Water~~

5. Report Date
6.

7. Author(s)
~~William~~ A. Campbell and ~~Milton~~ S. Heath, Jr.

8. Performing Organization Report No.

9. Organization
Institute of Government, ~~UNC~~, Chapel Hill ~~for WRRI of The~~ University of North Carolina

10. Project No. OWRT, B-109-NC (1)

11. Contract/Grant No.
14-34-0001-8104

12. Sponsoring Organization

13. Type of Report and Period Covered

15. Supplementary Notes Water Resources Research Institute, University of North Carolina, Raleigh
~~UNC-WRRI~~ Report No. 137, 49 pp. February 1979

16. Abstract

The federal flood insurance program has made it possible for landowners in flood hazard areas to obtain subsidized insurance protection against flood damages. As a condition of this protection, however, the local governments in which flood-prone land is located must adopt various restrictions on the use of land in the floodway and flood hazard areas. The North Carolina legislative center piece for authorizing local flood plain regulations is the Floodway Act. This act is deficient both in terminology and in scope of coverage when examined in the light of the federal requirements. To remedy these deficiencies it is recommended that the Act's coverage be broadened to include flood hazard areas beyond the floodway, to include areas of coastal flooding, and to delete the uses permitted as of right in the floodway.

It is important for the state to play a major coordination and advisory role in land use regulation for flood protection. Local governments need technical assistance in preparing and administering the necessary regulatory measures, and the state has an important role to play in coordinating local efforts with the Federal Insurance Administrator and in generally overseeing the program. In addition, state property must meet the federal requirements in order for the state to obtain insurance or to qualify as a self insurer. Statutory changes are suggested to meet these needs.
(Kiger - North Carolina)

17a. Descriptors
~~floods, North Carolina,~~ * flood plain management, floodway, droughts,
FLOOD INSURANCE, FLOOD PROTECTION, LAND USE, LEGAL ASPECTS

17b. Identifiers
~~Flood plain management, floodway, floodway act, floods, flood hazards, droughts~~

17c. COWRR Field & Group 06E

Available from the National Technical Information Service as PB

18. Availability ~~UNC-WRRI~~ PB294639

19. Security Class. (Report)
20. Security Class. (Page)
21. No. of Pages 61
22. Price 1-A04-A01

Send To:
WATER RESOURCES SCIENTIFIC INFORMATION CENTER
U.S. DEPARTMENT OF THE INTERIOR
WASHINGTON, D.C. 20240

Abstractor Linda Kiger
Institution UNC-WRRI

WRSIC 102 (REV. JUNE 1971)

UNC-WRRI-79-137

Legal Aspects of Flood Plain Management

By

William A. Campbell and Milton S. Heath, Jr.
Institute of Government
University of North Carolina at Chapel Hill
Chapel Hill, North Carolina 27514

The work upon which this publication is based was supported in part by funds provided by the Office of Water Research and Technology, U.S. Department of the Interior, Washington, D.C., through the Water Resources Research Institute of The University of North Carolina as authorized by the Water Research and Development Act of 1978.

Project No. B-109-NC
Agreement No. 14-34-0001-8104
February 1979

Contents of this publication do not necessarily reflect the views and policies of the Office of Water Research and Technology, U. S. Department of the Interior, nor does mention of trade names or commercial products constitute their endorsement of recommendation for use by the U. S. Government.

Acknowledgments

The authors wish to express their appreciation to Lenwood Long, Director of the Division of Community Assistance, and June Beane and John Morris of the Department of Natural Resources and Community Development, for their support and assistance; to William Harris of the Atlanta Regional Office of the Federal Insurance Administration for his advice and counsel; and to Dr. Neil Grigg and Dr. James Stewart of the UNC Water Resources Research Institute for their continuing encouragement and support.

Abstract

The federal flood insurance program has made it possible for landowners in flood hazard areas to obtain subsidized insurance protection against flood damages. As a condition of this protection, however, the local governments in which flood-prone land is located must adopt various restrictions on the use of land in the floodway and flood hazard areas. The North Carolina legislative center piece for authorizing local flood plain regulations is the Floodway Act. This act is deficient both in terminology and in scope of coverage when examined in the light of the federal requirements. To remedy these deficiencies it is recommended that the Act's coverage be broadened to include flood hazard areas beyond the floodway, to include areas of coastal flooding, and to delete the uses permitted as of right in the floodway.

It is important for the state to play a major coordination and advisory role in land use regulation for flood protection. Local governments need technical assistance in preparing and administering the necessary regulatory measures, and the state has an important role to play in coordinating local efforts with the Federal Insurance Administrator and in generally overseeing the program. In addition, state property must meet the federal requirements in order for the state to obtain insurance or to qualify as a self insurer. Statutory changes are suggested to meet these needs.

Preceding page blank

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	iii
ABSTRACT	v
SUMMARY AND CONCLUSIONS	ix
RECOMMENDATIONS	xi
I. FEDERAL FLOOD INSURANCE PROGRAM	1
II. NORTH CAROLINA LEGISLATION	12
III. INTERACTION OF FEDERAL FLOOD INSURANCE REQUIREMENTS AND SAND DUNE PROTECTION PROGRAMS	20
IV. FLOOD PLAIN REGULATION AND THE TAKING ISSUE	30
V. FLOOD PLAIN MANAGEMENT LEGISLATION FROM OTHER STATES	46

Preceding page blank

Summary and Conclusions

We believe that the major elements of an effective flood plain management program can be summarized as follows:*

1. The flood hazard areas and the land area (floodway) necessary to transport flood waters of a given magnitude--the 100-year flood, for example--must be identified and mapped.
2. Development in the flood hazard and floodway areas must be strictly controlled. The purpose of controlling development is not only to avoid damage to structures but also to prevent the placing of impermeable surfaces in areas that cause the volume and velocity of flood waters to increase, thereby increasing the risk of damage downstream. To this end, paved streets and parking lots should be prohibited or severely restricted in the hazard areas.
3. Structures that are permitted in the hazard areas should either be raised above the elevation of expected flooding or be flood-proofed below that level.
4. Existing structures in the floodway should be treated as nonconforming uses, and no substantial repairs or improvements to such structures should be permitted. If damaged or destroyed by flooding, the rebuilding of such structures should be prohibited.
5. Wetlands and other natural storage areas should be preserved in their natural states wherever possible.

Basic Options

The basic options for changes in existing North Carolina law are as follows:

A. General Enabling Legislation

(1) Option 1: (a) Repeal the Floodway Act and rely on local land use regulation powers (zoning, subdivision control, police power ordinances)
(b) Designate a state agency to coordinate state activities, provide technical assistance to local governments, and provide for state input to regulation (e.g., retain state delineation, or provide for state approval).

(2) Option 2: Revise the Floodway Act to meet federal requirements and to make other desirable changes, taking into account other local land use regulations, and covering the coastal area's needs.

(3) Option 3: Write a new comprehensive flood hazard reduction law, including provision for protection of downstream areas.

---

*From Kusler, Flood Plain Regulations for Flood Plain Management (1976), Implementation of Non-Structural Alternatives in Flood Damage Abatement (Proceedings, 1976), and R. Heath, Flood and Droughts: The Worst Are Yet To Be (1978).

Preceding page blank

B. Sand Dunes and Ocean Hazard Areas

(1) Option 1: (CRC recommendation) Repeal the Sand Dune Law and rely on a combination of CAMA permits and local police power ordinances (CRC staff to prepare model ordinances and work with interested cities and counties to cover areas not under CAMA jurisdiction but previously covered under the Sand Dune Law.)

(2) Option 2: Add to the State Building Code an Appendix concerning "A Zones" under flood insurance program. (This could be combined with other options).

(3) Option 3: Retain the Sand Dune Law and CAMA-AEC's; clarify cities' authority to adopt their own ordinances; CRC to serve as general clearinghouse and coordinator to simplify permits, etc.

C. State-Owned Property

The proposed Executive Order (Nov. 15, 1978) prepared by the State Property Office.

Recommendations

I. After discussions with state, local, and federal officials and reviewing the applicable law, it appears to us advisable to retain in an amended and strengthened form the Floodway Act (G.S. 143-215.51 et seq.) for the following reasons: many units of local government that do not have general zoning ordinances may need and want to have flood plain regulatory ordinances, and the state enabling act strengthens the legal basis for such regulations; the existence of a state statute and state program bolsters the position of local governments if local regulation is challenged as a taking of property; and the existing authority of the state to delineate the floodway and thereby encourage local regulation is an important stand-by authority.

II. Although the Floodway Act should be retained, to fully comply with the requirements of the federal flood insurance program and to otherwise serve as the foundation for an effective state program it should be amended in the following particulars:

A. One of the key terms in the Floodway Act is "floodway." The definition of this term corresponds with the "regulatory floodway" as defined in the federal flood insurance regulations. The federal regulations, however, require local regulation beyond just the floodway, as defined, to include flood-prone areas, mudslide prone areas, and flood-related erosion prone areas. It would seem advisable, then, to broaden the regulatory enabling authority of local governments to include the flood plain and related flood hazard areas, while retaining the state's authority to delineate only the floodway.

B. The exclusion of coastal flooding in G.S. 143-215.52(f) should be deleted so that the act covers coastal and estuarine flooding. Such regulation is required by the federal flood insurance program and there seems no reason to exclude it from the state program.

C. G.S. 143-215.54 excepts eight uses of land in the floodway from permit requirements. Although several of these uses would very likely be permitted in most flood hazard contexts, the complete and unqualified exception from permit requirements is in clear conflict with the federal flood insurance regulations, which provide that local governments must exercise permit authority over all land uses in the flood hazard zones. This provision should be removed from the statute.

D. G.S. 143-215.56 authorizes the Department of Natural Resources and Community Development to render various kinds of assistance to local government. The state program would likely benefit from several amendments to this provision. First, the statute only authorizes assistance to local governments "having responsibilities under this Part." It would seem preferable to broaden this to authorize assistance to any local government in flood control and land use regulation in the flood plain. Second, the assistance authority should be given to the Secretary of Natural Resources and Community Development rather than to the Department,

and the authority to adopt regulations under the Floodway Act should be given to the Secretary rather than to the Environmental Management Commission. Some aspects of floodplain management appropriately belong in Environmental Management, others do not. For example, management of the water quality aspects of flood plain management properly belong in the Environmental Management Division, but those aspects of the management program that involve assistance to local governments, preparation of a model ordinance, protection of wildlife, preservation of natural storage areas, and the central coordination of all flood plain management efforts very likely belong elsewhere in the department. Third, the Secretary should be expressly empowered to promulgate and assist with the adoption of a model flood plain management ordinance. Fourth, the Secretary should be expressly empowered to assist local governments in complying with federal flood insurance requirements.

E. There appears to be no need for the special provisions of G.S. 143-215.57 concerning review of every local permit decision by the superior court, with a jury trial. If this language is deleted, then the normal judicial review procedures will afford sufficient safeguards for any landowner who is aggrieved by the denial of a permit.

F. The authority of the Environmental Management Commission to delineate a floodway under G.S. 143-215.56(c) and (d) should be clarified. This authority should clearly cover any case where the Commission determines that the floodway should be delineated and the local government or local governments affected have not exercised their powers -- whether or not the reach of stream involved exceeds the jurisdiction of a single local government.

III. In order for the state to have its flood plain management program fully approved pursuant to federal regulations, the state's recording acts must be amended so that the following information may be recorded: (1) that a parcel of land is located within a flood-prone area; and (2) that a variance has been granted for building at an elevation below the base flood level. These notices will need to be recorded in the deed books in the office of the register of deeds and indexed with the property owner as grantor. These recording and indexing requirements need to be specified in a statute, along with a requirement of when such notices are to be recorded and whose duty it is to make the recording.

IV. The recommendation of the Coastal Resources Commission to repeal the sand dune law and rely on a combination of CAMA permits and local police power ordinances to cover sand dunes and other coastal hazard areas should be approved. This supports the objective of permit simplification, while adequately addressing the need to correlate federal flood insurance requirements and sand dune protection programs in coastal North Carolina.

The Office of Coastal Management should follow up this action by developing model ordinances for use by coastal area cities and counties. It would also be desirable that this action be supplemented by adoption of an appendix to the State Building Code that local governments in the

coastal area could apply to construction and improvements in FIA A-zones, or by the designation of floodway and flood plain AEC's by the Coastal Resources Commission.

V. The Executive Order proposed by the State Property Office appears to adequately address the issue of flood hazards affecting State-owned property.

I. Federal Flood Insurance Program

In 1968, in an effort to assure flood victims a measure of compensation for their damages and to impose rational controls on development in flood hazard areas, Congress enacted the National Flood Insurance Act.[1] The purpose of the legislation was to provide federally-subsidized flood insurance to property owners in flood hazard areas at much lower rates than would otherwise be available.[2] For a property owner to obtain the federal flood insurance, however, the unit of local government in which his property is located must have adopted land-use controls to restrict future development in the flood hazard areas. As originally enacted, the federal program extended only to riverine flooding, but it has been amended to cover coastal flooding, mudslides, and flood-related erosion.[3] The flood insurance program is administered by the Federal Insurance Administrator within the Department of Housing and Urban Development. Initially, participation in the program was voluntary, that is, a community was free not to adopt the necessary land-use controls, and even if it did, a property owner was free not to purchase the insurance. The Flood Disaster Protection Act of 1973, however, contained provisions that made it virtually mandatory for a community to become eligible for flood insurance by adopting land-use controls and for property owners to purchase that insurance. This was accomplished by requiring federal agencies that insure mortgage loans, such as the Federal Housing Administration and the Veterans Administration, not to approve any financial assistance for property acquisition or construction in flood hazard areas unless the community in which the property is located is participating in the federal program,[4] and by requiring federal agencies that regulate or insure lending institutions, such as the FDIC and the Comptroller of the Currency, to prohibit the lending institutions regulated or insured from making loans secured by property in flood hazard areas unless the property is in a participating community.[5]

---

1. 42 U.S.C. § 4001 et seq. For a brief history of the efforts to establish a federal program, see There is a High Rock (National Flood Insurers Association, 1976). For a more detailed description of the federal program as it existed prior to the 1977 amendments, see J. Kusler, A Perspective on Flood Plain Regulations for Flood Plain Management (1976) 105, and Marcus and Abrams, Flood Insurance and Flood Plain Zoning, 7 Natural Res. Lawyer 581 (1974).

2. Until quite recently the insurance was written by private insurance companies operating through an insurance pool (the National Flood Insurers Association). There are indications, however, that HUD intends to handle the insurance through a private contractor, abandoning use of the pool, see 144 N.C. Water Resources Research Newsletter 7 (1978).

3. See 42 U.S.C. § 4121.

4. 42 U.S.C. § 4012a(a).

5. 42 U.S.C. § 4012a(b).

As a consequence of these provisions, it became impossible to obtain even a conventional mortgage loan on property in a flood hazard area unless the property was qualified for flood insurance, that is, unless the local government with jurisdiction had adopted the necessary land-use controls.

These 1973 requirements proved to be too strong a prescription because they brought about pressures on Congress to remove them, which Congress did in 1977 in Title VII of the Housing and Community Development Act of 1977.[6] The major change was to delete the requirement that federal insuring and regulatory agencies prohibit financial institutions from making conventional loans on flood hazard property unless the property is in a participating community.[7] In its place, a much weaker sanction was imposed: denial of disaster relief for flood-caused damage if the property damaged was in a non-participating community.[8] This change makes it possible for property owners to obtain conventional mortgage loans for property in flood hazard areas without qualifying for flood insurance; however, the prohibition against federally insured loans on uninsured property was left intact.

The 1977 amendments also extended the deadline for communities to participate in the emergency insurance program from September 30, 1977 to September 30, 1978.[9] This enables a community to obtain federally subsidized insurance even though risk premium rates have not been established for the community.[10]

The aspect of the federal flood insurance program that has been of the keenest interest to local governments is the land-use controls necessary for property owners to qualify for the insurance. The Secretary of Housing and Urban Development, in consultation with the Secretaries of the Army, the Interior, and other federal and state agencies was directed to identify all special flood hazard areas by August 1, 1973[11] and then to establish flood-risk zones and estimates of rates of loss for those areas by August 1, 1983.[12] The secretary was further directed to conduct studies of land-use measures and regulations and on the basis of those studies to promulgate criteria designed to encourage state and local measures that will:

(1) constrict the development of land which is exposed to flood damage where appropriate,

---

6. P.L. 95-128 (October 12, 1977).
7. Id. § 703(a).
8. Id. § 703(b).
9. Id. § 701.
10. See, 42 U.S.C. § 4056. Communities participating in the emergency program are still required to adopt land-use regulations that satisfy the federal criteria, see 24 C.F.R. § 1909.3.
11. 42 U.S.C. § 4101(a)(1).
12. 42 U.S.C. § 4101(a)(2).

(2) guide the development of proposed construction away from locations that are threatened by flood hazards,

(3) assist in reducing damage caused by floods, and

(4) otherwise improve the long-range land management and use of flood-prone areas. . . .[13]

The secretary may make federally-subsidized flood insurance available only in those states or areas where land-use control measures consistent with published criteria have been adopted and where the "application and enforcement of such measures will commence as soon as technical information on floodways and on controlling flood elevations is available."[14] Operating within this statutory framework, the Federal Insurance Administrator has set forth the details of the land-use measures required of participating local governments in regulations.

The Administrator's detailed and comprehensive regulations on land-use measures are contained in 24 Code of Federal Regulations, Chapter X, Subchapter B. It is not our purpose here to reiterate these regulations, but rather to explain their organization and major requirements. The regulations establish land-use planning and management criteria for flood-prone areas,[15] mudslide-prone areas,[16] and flood-related erosion-prone areas.[17] These criteria are for the minimum acceptable regulations; local governments are encouraged to adopt more comprehensive and stringent regulatory programs.[18] In addition to the regulatory criteria for each of the three types of areas, the federal regulations contain land-use planning considerations that should be part of an acceptable local program.

Among the twenty-four specific planning considerations[19] that a local government is directed to take into account in preparing land-use regulations for flood-prone areas, the more general ones are: To permit only that development that is appropriate in light of the probability of flood damage and the need to reduce flood losses, that is an acceptable social and economic use of the land in relation to the hazards involved, and that does not increase the danger to human life; to divert development to areas safe from flooding in light of the need to reduce flood damages

---

13. 42 U.S.C. § 4102(c).

14. 42 U.S.C. § 4012(c), see also 42 U.S.C. § 4022.

15. Defined as "any land area susceptible to being inundated by water from any source." 24 C.F.R. § 1909.1.

16. Defined as "an area with land surfaces and slopes of unconsolidated material where the history, geology, and climate indicate a potential for mudflow." 24 C.F.R. § 1909.1.

17. Defined as "a land area adjoining the shore of a lake or other body of water, which due to the composition of the shoreline or bank and high water levels or wind-driven currents, is likely to suffer flood-related erosion damage." 24 C.F.R. § 1909.1.

18. 24 C.F.R. § 1910.1(d).

19. See 24 C.F.R. § 1910.22.

and in light of the need to prevent environmentally incompatible flood plain use; to improve local drainage to control increased runoff that might increase the danger of flooding to other properties; to require that new construction and substantial improvements in areas subject to subsidence be elevated above the base flood level equal to expected subsidence for at least a ten year period; and to require pilings or columns rather than fill, for the elevation of structures within flood-prone areas, in order to maintain the storage capacity of the flood plain and to minimize the potential for negative impacts to ecologically sensitive areas.

The criteria for the local land-use regulations provide for a four-stage approach to the regulation of flood-prone areas, with a special set of criteria for coastal areas. Each regulatory stage is based on the amount of information the local government has concerning flooding, flood elevations, and maps of the land areas within its jurisdiction, and each successive stage requires a more comprehensive and stringent regulatory program. At the first stage, the local government will have applied to participate in the flood insurance program, but the Administrator will not have defined the special flood hazard areas within the unit, will not have provided water surface elevation data, and will not have provided sufficient data to identify the floodway or the coastal high hazard area. A local government at this stage must: (1) require permits for all proposed construction or other development, including the placement of mobile homes; (2) review proposed development to assure that all necessary permits have been obtained from state and federal agencies; (3) review all permit applications to determine whether proposed building sites will be reasonably safe from flooding; (4) review subdivision proposals to determine whether the proposed developments will be reasonably safe from flooding; (5) require that new and replacement water supply systems in flood-prone areas be designed to minimize infiltrations of flood waters; and (6) require within flood-prone areas that sewerage systems and septic tanks be designed to minimize or eliminate the infiltration of flood waters.[20]

At the second stage of regulation, the Administrator will have designated the areas of special flood hazards by publication of a Flood Hazard Boundary Map[21] for the local government. At this stage, in addition to the requirements for the first stage, the local government must: (1) require permits for all proposed construction, including the placement of mobile homes, within Zone A[22] on the unit's FHBM; (2)

---

20. 24 C.F.R. § 1910.3(a).

21. Defined as "an official map of a community, issued by the Administrator, where the boundaries of the flood, mudslide (i.e., mudflow) related erosion areas having special hazards have been designated as Zone A, M, and/or E." 25 C.F.R. § 1909.1.

22. Zone A is an area of special flood hazard without water surface elevations determined; Zones A1-A99 are areas of special flood hazard with water surface elevations determined; Zone AO is an area of special flood hazard having shallow water depths or unpredictable flow paths between one and three feet. 24 C.F.R. § 1914.3(a)(1).

require subdivision proposals and other developments greater than 50 lots or five acres to include within such proposals base flood[23] elevation data; (3) use available base flood elevation data to require in new residential construction and substantial improvements that the lowest floor be elevated to or above the base flood level; (4) notify adjacent communities and the State Coordinating Office prior to any alteration or relocation of a watercourse; (5) assure that the flood carrying capacity within any altered or relocated portion of a watercourse is maintained; and (6) require mobile homes placed within Zone A on a FHBM to be anchored to resist flotation, collapse, or lateral movement.[24]

At stage three, the Administrator will have provided notice of the final base flood elevations on the local government's Flood Insurance Rate Map.[25] At stage three, in addition to the requirements for stage two, a local government must: (1) require that new residential construction and substantial improvements within Zones A1-A30 on the FIRM have the lowest floor (including the basement) elevated to or above the base flood level; (2) require new non-residential construction and substantial improvements within Zones A1-A30 on the FIRM either have the lowest floor (including the basement) elevated to or above the base flood level, or have facilities below the base flood level made watertight; (3) require for certain new or expanded mobile home parks in Zones A1-A30 that the stands or lots be elevated so as to be at or above the base flood level and that adequate surface drainage is provided; (4) require that mobile homes placed in Zones A1-A30, but not in a park, be elevated so that the lowest floor will be at or above the base flood level and that adequate surface drainage is provided; (5) require that new residential construction and substantial improvements located within Zone A0 have the lowest floor (including the basement) elevated above the crown of the nearest street to or above the depth number specified on the FIRM; (6) require that new non-residential construction and substantial improvements located within Zone A0 either have the lowest floor (including the basement) elevated above the crown of the nearest street to or above the depth number specified on the FIRM, or have facilities below that level made watertight; and (7) require, until a regulatory floodway is designated, that no new construction, substantial improvements, or other development be permitted within Zones A1-A30 unless it is demonstrated that the cumulative effect of the proposed development, when combined with existing and anticipated development, will not increase the water surface of the base flood more than one foot at any point within the community.[26]

---

23. Defined as "the flood having a one percent chance of being equaled or exceeded in any given year." 24 C.F.R. § 1909.1. Usually referred to as the "100-year flood."

24. 24 C.F.R. § 1910.3(b).

25. Defined as "an official map of a community, on which the Administrator has delineated both the special hazard areas and the risk premium zones applicable to the community." 24 C.F.R. § 1901.1.

26. 24 C.F.R. § 1910.3(c).

Stage four is the final regulatory stage, and at this stage the Administrator, in addition to the FIRM designations provided at stage three, will have provided data from which the local government shall designate its regulatory floodway.[27] At this stage, in addition to the requirements of stage three, the local government must: (1) select and adopt a regulatory floodway based on the principle that the area chosen for the floodway must be designed to carry the waters of the base flood without increasing the surface elevation of that flood more than one foot at any point; (2) prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway that would result in any increase in flood levels within the community during the occurrence of the base flood discharge; and (3) prohibit the placement of any mobile homes, except in an existing mobile home park, within the floodway.[28]

A special set of requirements is provided for local governments whose land areas are subject to coastal flooding. Once the Administrator has made the FIRM designations required at stage three and has also identified the community's coastal high hazard areas on the FIRM (Zones V1-V30), the local government, in addition to the requirements for stage three, must: (1) require that all new construction within Zones V1-V30 be located landward of the reach of mean high tide; (2) require that all new construction and substantial improvements located within Zones V1-V30 be elevated on and securely anchored to pilings or columns so that the lowest portion of the structural members of the lowest floor is elevated to or above the base flood level; (3) require that all new construction and substantial improvements in Zones V1-V30 have the space below the lowest floor free of obstructions or be constructed with "breakaway walls"; (4) prohibit the use of fill for structural support of buildings within Zones V1-V30; (5) prohibit the placement of mobile homes, except in existing mobile home parks, within Zones V1-V30; and (6) prohibit man-made alteration of sand dunes and mangrove stands within Zones V1-V30 that would increase potential flood damage.[29]

Among the major planning considerations for mudslide-prone areas that a local government should take into account are the potential effects of inappropriate hillside development, including loss of life and property damage, avoiding the hazard by preserving mudslide-prone areas as open space and guiding development to other areas, and planning subdivisions and other developments in such a manner as to avoid exposure to mudslide hazards.[30] The regulatory requirements for mudslide-prone areas are a two-stage affair. At the first stage, when a local

---

27. Defined as "the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height." 24 C.F.R. § 1909.1.

28. 24 C.F.R. § 1910.3(d).

29. 24 C.F.R. § 1910.3(e).

30. See 24 C.F.R. § 1910.23.

government has applied to participate in the insurance program, but the Administrator has not identified within the community any areas having special mudslide hazards, the local government must: (1) require permits for all proposed construction or other development in the community; (2) review each permit application to determine whether the proposed site and improvements will be reasonably safe from mudslides; and (3) if a proposed site and improvements are in a location that may have mudslide hazards, require certain site investigations, planning, drainage, and maintenance so as to minimize the hazard.[31] At the second stage, the Administrator will have identified the areas of special mudslide hazards (Zone M) on the community's FIRM. At the second stage, in addition to meeting the requirements of the first stage, the local government must adopt a grading ordinance that (a) regulates the location of foundation systems and utility systems of new construction and substantial improvements, (b) regulates the location, drainage, and maintenance of all excavations, cuts and fills, and planted slopes, (c) provides special requirements for protective measures, and (d) requires engineering drawings and specifications to be submitted for all corrective measures.[32]

Among the planning considerations for flood-related erosion-prone areas that local governments must take into account are: (1) the importance of directing future developments to areas not exposed to flood-related erosion; (2) the possibility of reserving flood-related erosion-prone areas as open space; and (3) preventive measures in such areas, including setback requirements and shore protection works.[33] The regulatory requirements for flood-related erosion-prone areas, as with mudslide areas, are in two stages. At the first stage, when a local government has applied to participate in the insurance program but the Administrator has not identified areas having flood-related erosion hazards in the community, the local government must: (1) require permits for all proposed construction or other development within the area of flood-related erosion hazard, as it is known to the community; (2) require review of each permit application to determine whether the proposed site alterations will be reasonably safe from flood-related erosion; and (3) require relocation or protective measures if a proposed improvement is to be in the path of flood-related erosion.[34] At the second stage, the Administrator will have designated the special flood-related erosion-prone areas (Zone E) on the FIRM and the local government must, in addition to meeting the requirements of stage one, require a setback for all new development from the ocean, lake, riverfront, or other body of water to create a buffer zone consisting of a natural vegetative or contour strip.[35]

---

31. 24 C.F.R. § 1910.4(a).
32. 24 C.F.R. § 1910.4(b).
33. See 24 C.F.R. § 1910.24.
34. 24 C.F.R. § 1910.5(a).
35. 24 C.F.R. § 1910.5(b).

Although we have not mentioned every specific land-use and related regulatory measure required by the federal regulations, we have gone into considerable detail regarding these regulations so that an accurate picture can be obtained of what is required of local governments. The regulation required is extensive and in some instances fairly complex. There is sufficient authority for enactment of the required regulatory measures by North Carolina local governments in the zoning enabling legislation,[36] the subdivision regulations enabling legislation,[37] and the general ordinance power.[38] Adequate legal authority to enact and enforce the required measures is necessary, but that alone is not enough for an effective program. The development and enforcement of the required regulatory measures require a technical competence and planning sophistication that in many instances will be beyond the capabilities of local governments, especially those with no existing zoning or subdivision ordinances. This plainly places a large responsibility on state government for advice, assistance, and coordination. The federal regulations address this point by including eighteen items that are suggested at the state level to assist in carrying out the regulatory program.[39] A state is not required to undertake these activities, merely encouraged to do so, but as will be discussed below, substantial advantages accrue to a state that adopts a program meeting the federal desiderata beyond just the satisfaction of having a vigorous and effective flood hazard management program.

The eighteen items suggested in the federal regulations fall into two categories, those providing assistance and advice to local governments, and those calling for specific changes or requirements that the state might impose. Some of those in the first category include designating a state agency to be responsible for coordinating federal, state, and local aspects of flood plain management; guiding and assisting municipalities and counties in developing flood plain management plans and regulations; assuring coordination and consistency of flood plain management and planning with comprehensive planning at the state, regional, and local levels; and assuring coordination between the state flood plain management coordinating agency and the state office established to supervise state participation in the federal Coastal Zone Management Program. These provisions envision an active state office playing an aggressive role in furnishing assistance to local governments and in coordinating state and local efforts with federal directives and planning.

The specific requirements called for are: Establishing minimum state flood plain regulatory standards consistent with the federal standards established in the regulations; requiring that proposed uses

---

36. See G.S. 160A-381 et seq. for cities and G.S. 153A-340 et seq. for counties.

37. See G.S. 160A-371 et seq. for cities and G.S. 153A-330 et seq. for counties.

38. See G.S. 160A-174 for cities and G.S. 153A-121 for counties.

39. 24 C.F.R. § 1910.25(a).

of flood plain areas conform to standards established by state environmental and water pollution control agencies to assure that proper safeguards are being provided to prevent pollution during periods of flooding; and amending the state recording acts so that the following information may be recorded to give public notice, (1) that a parcel of land is located within a flood-prone area, and (2) that a variance has been granted for building at an elevation below the base flood level, thereby resulting in increased premium rates for flood insurance under the federal program. More will be said about these three specific requirements in the section of the study dealing with recommended changes in the North Carolina statutes for flood plain management; however, a few brief comments about these requirements are in order here. The first one, establishing minimum state flood plain regulatory standards consistent with the federal ones, is exceedingly vague. It is not stated whether these standards should be contained in state statutes or in regulations, whether they should apply to all land areas or only to those not covered by an acceptable local program, or even what the exact nature of the regulatory standards are. The second one, ensuring compliance with state pollution control regulations, should be relatively easy to meet. It would appear to concern such matters as the selection of sites for streets and utilities, and the location and flood-proofing of sewerage and water supply systems. The third one, amendments to the recording laws, can be accomplished within the structure of the existing registration and indexing provisions, but any changes must be carefully drafted to satisfy the needs and demands of title attorneys and registers of deeds.

The advantages that accrue to a state with a program of coordination and assistance substantially complying with the federal recommendations are two. First, when a state has an acceptable program, the Administrator will give "special consideration" to the state's priority recommendations before selecting communities for ratemaking studies.[40] Second, the Administrator will accept state-approved and certified local flood plain management regulations as meeting the requirements of the federal regulations.[41]

The state's responsibility for and concern with flood plain management and the federal flood insurance program does not end with advising and assisting local governments; the state must also be concerned with insuring state property located in hazard zones. The state has two choices in this regard: it may either purchase standard flood insurance protection, or it may become a self-insurer. In order either to obtain insurance or to qualify as a self insurer, the state must meet the land-use regulation criteria specified for local governments.[42] To do this, the state must either comply with the flood plain management requirements of all local governments participating in the federal program or it must

---

40. 24 C.F.R. § 1910.25(b)(1).
41. 24 C.F.R. § 1910.25(b)(2).
42. See 24 C.F.R. §§ 1910.11, 1910.12. Subpart 1925 of the regulations contains the special requirements and procedures whereby the state may qualify as a self-insurer for state structures and their contents.

establish and enforce its own flood plain management regulations that meet the criteria set forth in the federal regulations.[43] It would seem to be administratively more feasible and also more economical for the state to elect the first method and comply with local regulations. This would not mark a new departure for state agencies, since they are already expressly made subject to local zoning ordinances,[44] and most of the local flood plain management regulations that would be applicable to state buildings fall into the zoning category. All of the necessary regulations, however, cannot be brought under the heading of "zoning" and, therefore, be made applicable to state buildings by statute. For example, the requirements for floodproofing below the level of the base flood[45] and for elevating certain structures in the coastal high hazard areas on columns or pilings[46] are in the nature of building code regulations[47] and those regarding the design of water supply systems[48] and sewerage systems[49] in flood prone areas are general police regulations. State agencies are exempt from such local police regulations, in the absence of some express statutory direction to the contrary.[50] Despite this exemption, compliance by state agencies with local flood plain regulations could be had by means of an executive order issued by the Governor[51] and implemented by the Department of Administration.[52] This would appear to be sufficient compliance with the federal regulations.

For state buildings currently located or to be located in a local jurisdiction that is not participating in the federal program, the state must adopt and enforce flood plain management regulations that meet the federal criteria.[53] This would require a state agency, probably the

---

43. 24 C.F.R. § 1910.12(a).

44. See G.S. 160A-392 (cities) and G.S. 153A-347 (counties).

45. 24 C.F.R. § 1910.3(c)(3).

46. 24 C.F.R. § 1910.3(e)(4).

47. In North Carolina, local governments that desire to adopt and enforce their own building codes adopt the state code, see G.S. 143-138(e) and State Building Code § 108.1 (1978), and although state buildings are exempt from the requirements of local building codes, see G.S. 143-135.1, the state code is applicable to state buildings, see G.S. 143-138(b) and State Building Code § 101.4 (1978). All of this is by-the-by, however, since the State Department of Insurance does not treat local flood plain management regulations as building code regulations, so for the purpose under discussion, such regulations should be treated the same as general police regulations.

48. 24 C.F.R. § 1910.3(a)(5).

49. 24 C.F.R. § 1910.3(a)(6).

50. See 6 McQuillen, Municipal Corporations, "Municipal Police Power and Ordinances" § 24.17 (1969). No North Carolina decisions have been found on this point, but there is no reason to believe that the North Carolina court would follow a principle different from the one stated in McQuillen.

51. See N.C. Const. Art. III. § 1.

52. See G.S. 143-341(3).

53. 24 C.F.R. § 1910.12(a)(2) and (c).

Department of Administration, to develop flood plain management regulations to be complied with by agencies constructing buildings in such nonparticipating local jurisdictions. The federal regulations, as we interpret them, do not require the state to adopt and enforce flood plain management regulations generally for such jurisdictions that would be applicable to buildings and structures constructed by private parties and local government agencies.

II. North Carolina Legislation Relating To Flood Hazards And Flood Plain Management

Introduction

North Carolina came into the 1970's with state agencies charged to develop general flood hazard policy, to review P.L. 566 projects in light of flood plain management needs, and to administer a dam safety law. Its enabling laws for local zoning, subdivision control, building regulation and open space acquisition probably encompass flood plain management.

Since 1970 a floodway control law has been added to the legislation, together with authority to regulate floodway and flood plain occupancy under the Coastal Area Management Act, the Sedimentation Pollution Control Law, and legislation on coastal insurance. Throughout all of this legislation runs a thread of emphasizing the basic responsibility of local government, and the secondary supportive or surveillance role of the state.

The details of this legislation are described below.

General Flood Plain Management Policy

The 1967 General Assembly directed the Department of Water Resources to initiate, plan and execute a long-range flood plain management program, including an active educational element.[54] This legislation stressed the primary responsibility of local government, and the guidance, coordination and assistance role of the State.

These responsibilities have been transferred as a result of a series of reorganizations to the Department of Natural Resources and Community Development.

Review of Small Watershed Projects

Another 1967 statute required the Board of Water Resources (now the Environmental Management Commission), in the course of its statutory review of P.L. 566 small watershed projects, to determine whether flood plain management measures are "in the public interest" in connection with such projects.[55] The Commission is to withhold approval of any project that needs a flood plain management element until satisfactory measures are incorporated.

---

54. G.S. 143-355(A)(15).
55. G.S. 139-35(c)(3).

Dam Safety

A third 1967 statute, the Dam Safety Law, is designed to protect against unsafe or undesirable construction and maintenance of dams.[56] Under this statute the EMC is authorized to review plans for building, repairing, altering or removing dams in order to ensure safety and to maintain minimum stream flows necessary to maintain stream classifications and water quality standards. (Federally owned, subsidized and licensed dams are exempt from the statute. Certain small dams are also exempt.) The work on projects subject to this law must be supervised by qualified engineers, who must certify to the completion of the work in accordance with design and other requirements. The statute also empowers the EMC to conduct an inspection program covering existing dams through consulting engineers.

In some respects the dam safety and flood plain management programs may complement one another. For example, the Floodway Law of 1971 (see page below) exempts dams from its coverage, reflecting the fact that many dams are regulated under the Dam Safety Law.

Local Land Use Control Enabling Laws

North Carolina has enabling legislation that authorizes both cities and counties to create planning boards and to adopt zoning and subdivision control ordinances. It also has a variety of statewide enabling laws for regional planning and development organizations. Building inspectors are authorized for cities and counties, and they administer a State Building Code, with local modifications in some instances. There is also city and county enabling legislation for historic districts, appearance districts, minimum housing standards, and open space acquisition. The city legislation is largely codified in G.S. Chapter 160A, Article 19, and the county legislation in G.S. Chapter 153A, Article 18.

Among these statutes the enabling laws concerning zoning, subdivision control and building regulation are especially pertinent to flood hazard regulation. None of these enabling laws expressly mentions flood hazards as a subject that may be regulated by cities or counties. Each of them, however, includes some general language that could be interpreted to encompass flood hazard regulation. For example, the zoning enabling laws authorize cities and counties to adopt zoning regulations to promote "health, safety, morals and the general welfare", and "to secure safety from fire, panic and other dangers".[57] The subdivision enabling laws authorize cities and counties to regulate for "orderly growth and development" and to "create conditions essential for public health, safety and general welfare".[58] The State Building Code

---

56. G.S. 143-215.23 et seq.
57. G.S. 153A-340, -341; G.S. 160A-381, -383.
58. G.S. 153A-331; 160A-372.

may regulate construction "as may be found reasonably necessary for the protection of the occupants, . . . neighbors, and members of the public at large."[59]

Some cities have relied on these powers as a basis for flood plain management provisions in zoning or subdivision control ordinances,[60] and the State Building Code Council has approved flood hazard related provisions for local adoption.[61] In 1969 the General Assembly amended the "whereas" recitals of the 1967 flood plain management statute (See p. 1 a above) to indirectly shore up the position that existing general enabling laws for zoning, subdivision regulation, building regulation and open space encompass flood hazard regulations even though floods are not expressly mentioned in these laws.[62] This was designed to allay questions about the coverage of the basic enabling laws, without disturbing the generality of their language.

The Floodway Law of 1971

In 1971 North Carolina enacted a floodway regulation enabling law for cities and counties.[63] As originally enacted, this law simply authorized local governments to adopt ordinances regulating artificial obstructions in stream channels and that portion of the flood plain that carries the 100-year flood without increasing the elevation of that flood by more than one foot. Existing obstructions (as of July 1, 1971) may be continued, but may not be enlarged or replaced, without a permit. By excluding flooding due to tidal or storm surge on estuarine or ocean waters, the law largely exempted much of the state's coastal area.

The floodway law was strengthened in 1973 by an amendment adding a triggering mechanism that can be activated by the state: the power of the Environmental Management Commission to delineate a floodway, and thereby prohibit development without a local permit issued pursuant to a floodway ordinance.[64] Under subsection (c) of G.S. 143-215.56 this power may be exercised "when the reach of a stream in which a floodway is determined by the Environmental Management Commission [EMC] to be needed exceeds the jurisdiction of a single local government". The next subsection of G.S. 143-215.56, subsection (d), begins with the following sentence:

---

59. G.S. 143-138(b).

60. Cities that, even prior to the current Federal flood insurance program, adopted flood plain zoning or subdivision provisions include Charlotte, Durham, Elizabeth City, Greensboro, and Winston-Salem. Counties include Wake, Catawba, Iredell and Lincoln.

61. The Building Code Council approved for local adoption HUD regulations for flood proofing.

62. S.L. 1969, Ch. 473.

63. G.S. 143-215.51 to 143-215.61.

64. G.S. 143-215.56(c) and (d).

(d) If the Environmental Management Commission determines that the floodway of any stream or stream segment should be delineated and the use thereof controlled as provided in this Part, and the local governments within which the stream or segment lies have not delineated the floodway or controlled uses therein, the Environmental Management Commission shall advise the local governments of its intent to delineate the floodway, and it shall be the responsibility of the local governments to control uses therein.

Subsection (d) can be interpreted in either of two ways, in context with subsection (c): (1) As merely providing the procedure for implementing the authority of EMC under (c) to delineate floodways in multi-local-government situations; or (2) as giving EMC authority to delineate floodways, not only in multi-unit situations, but also whenever a local government has failed to act and EMC believes that a floodway should be delineated. The second interpretation obviously would give EMC considerably greater authority than the first interpretation.

The Floodway Law exempts certain uses by providing that they may be made as a matter of right without a permit.[65] These exempted uses are:

(1) General farming, pasture, outdoor plant nurseries, horticulture, forestry, wildlife sanctuary, game farm, and other similar agricultural, wildlife and related uses.
(2) Loading areas, parking areas, rotary aircraft ports, and other similar industrial-commercial uses.
(3) Lawns, gardens, parking, play areas, and other similar uses.
(4) Golf courses, tennis courts, driving ranges, archery ranges, picnic grounds, parks, swimming pools, hiking or horseback-riding trails, open space and other similar private and public recreational uses.
(5) Streets, bridges, overhead utility lines, railway lines and rights-of-way, creek and storm drainage facilities, sewage or waste treatment plant outlets, water supply intake structures, and other similar public, community or utility uses.
(6) Temporary facilities (for a specified number of days), such as displays, circuses, carnivals, or similar transient amusement enterprises.
(7) Boat docks, ramps, piers, or similar structures.
(8) Dams.

Most of these exemptions were included in order to bolster the case that the statute allows a sufficient range of land uses that do not obviously conflict with flood plain management objectives to pass constitutional tests concerning "takings" and substantive due process.[66] A few of the

---

65. G.S. 143-215.54.

66. United States Constitution Amendments 5 and 14, North Carolina Constitution Article 1, Section 19.

exempt categories, such as those set forth in paragraphs (5), (7) and (8), involve subjects otherwise regulated under federal or state law;[67] in these cases the legislature apparently felt that flood management objectives would better be built into existing regulations without creating an additional permit system.

G.S. 143-215.57 sets out the procedures to be followed by local governments in issuing floodway use permits. In summary, it provides that:

(1) The responsible local government (i.e., the city or county) shall consider the effects of a proposed floodway obstruction in creating danger to life and property by backwater, diversion, downstream injuries, and on-site injuries.

(2) The city or county shall follow the procedures for an ordinance for the better government of a city or county, as the case may be, in prescribing permit issuance standards and in issuing permits. (The reference to procedures for ordinances "for the better government" of a city or county are obsolete, having been superseded by different language and revised procedures in recodifications of G.S. Chapters 153A and 160A.)

(3) Cities may exercise their powers within their extraterritorial zoning jurisdictions, and counties, within (as well as outside) cities with city approval.

(4) Cities and counties may adopt regulations concerning the form, time and manner of submission of floodway use permit applications.

No further standards are spelled out concerning floodway use ordinances or issuance of floodway use permits.

G.S. 143-215.57(c) makes final decisions granting or denying permits subject to review by the superior court of the county, with a right of jury trial at trial at appellant's election. The procedures of Rule 38(b) of the Rules of Civil Procedure are to govern the time and manner of election of a jury trial. The scope of review is not delineated.

G.S. 143-215.58 makes violations of the Floodway Law or of local ordinances adopted thereunder a misdemeanor. Failure to remove an obstruction, or enlarging or replacing an obstruction, is a separate violation for each 10 days of continued violation after written notice from the city or county. Injunctive relief is also made available to require removal of obstructions or restore pre-existing conditions.

G.S. 143-215.59 makes the floodway permit an added requirement, not affecting other approvals required by statute or ordinance. G.S. 143-215.61 provides that the floodway law does not preclude city or county adoption of other floodplain management regulations or controls.

---

67. E.g., Federal and state highway laws and regulations, water pollution control laws and regulations, dredge and fill permit laws and regulations, dam safety laws, and the Federal Power Act.

Coastal Area Management Act

The general background and basic procedures of the Coastal Area Management Act (CAMA) are described in the review of sand dune protection and flood insurance (See pages). As noted there, the Coastal Resources Commission is authorized by CAMA to designate areas of environmental concern (AEC's) within which land development permits must be obtained from the Commission or from local governments.[68]

G.S. 113A-113(b)(6) empowers the Commission under the general heading of "natural-hazard areas" to designate AEC's covering floodways and floodplains within the twenty coastal area counties. The Commission has not elected to exercise this authority, preferring to await developments under the federal flood insurance program. Indeed, a bill supported by the Commission in 1977 proposed to repeal some of the unexercised AEC powers, including the floodway-flood plain powers. The Commission did not foresee any likelihood of exercising this authority in the foreseeable future and recognized that problems associated with flood plain management are not unique to the coastal area.[69]

In a related action the Commission has elected to exercise its authority to designate two AEC categories that include some of the same territory that might be covered under a floodway or flood plain AEC: estuarine shorelines and public trust areas.[70] Estuarine shorelines are the areas extending 75 feet landward from mean highwater level along the estuaries, sounds, bays, and brackish water. (These areas in practice often overlap coastal wetlands, already regulated by federal-state dredge and fill permits.)[71] Public trust areas include all navigable waters, tidal waters and lands under these waters. In practice this subcategory extends the estuarine shoreline AEC's up the rivers that are tributary to the estuaries to the furthest reach of navigability or tidal influence.

The extent to which the estuarine shoreline and public trust AEC designations might implement flood management objectives would require a close examination of the relevant AEC guidelines and permit conditions.

Coastal Insurance

Article 18A of the Insurance Law[72] creates the North Carolina Insurance Underwriting Association for the purpose of underwriting fire and extended coverage for beach area property. This law was enacted in

---

68. G.S. 113A-113.

69. H 1117, 1977 General Assembly.

70. G.S. 113A-113(b)(5) and (6), N.C. Administrative Code Tit. 15, Ch. 7, Subch. 7I, Sections .0207, .0209.

71. 33 U.S.C. § 1344 (Section 404 of the Federal Clean Water Act) and G.S. 113-229, 113-230.

72. G.S. Chapter 58.

1967, with amendments in 1969. With minor exceptions, it requires all insurers authorized to write property insurance in this state to be members of the Association and to participate in its writings, expenses, profits and losses in proportion to their net direct premiums. Any person having an insurable interest in insurable property in the beach area of North Carolina may apply for and obtain coverage if he is not in arrears on premiums.

Sedimentation Pollution Control Law

Since 1973, North Carolina has had a statutory framework and active state program to control erosion and stream sedimentation from construction sites. There is a comprehensive state program administered under the general supervision of the Sedimentation Control Commission and there are several local programs in existence, which are required to meet minimum state standards. Most of the elements of the sedimentation control program are not relevant to flood control, but some of the Sedimentation Control Commission's regulations--those dealing with stormwater management--are directly relevant.

The Sedimentation Control Commission in preparing its regulations, was convinced--apparently--that the management of storm water runoff is closely related to sedimentation control and should be dealt with in the same regulatory program. There is, however, no direct and explicit authority in the Sedimentation Pollution Control Act for the development of a storm water runoff management program. The Attorney General advised the Commission in 1973 that there is sufficient authority in the act to support a storm water management program closely allied to the sedimentation control program, but there is still room for doubt since neither the report of the Legislative Research Commission nor the act itself mentions storm water management, and the act is lacking in the standards and details for such a program that one would normally expect if such a program had been intended.[73] Storm water runoff is defined in Section 3u of the regulations as "the direct runoff of water resulting from precipitation in any form," and in addition to the control of storm water runoff being one of the basic control objectives for any erosion control plan, three other sections of the regulations--seven, eight, and twelve--are concerned with storm water management.

Section seven of the regulations establishes a performance standard that any erosion control plan and the structures and devices used pursuant to that plan must meet: the control devices must be so designed and constructed as "to provide control from the calculated peak rates of runoff from a ten-year frequency storm." The runoff rates are to be calculated using the procedures in the Soil Conservation Service's "National Engineering Field Manual for Conservation Practices" or other acceptable calculation procedures. It is not entirely clear what the

---

73. 43 N.C. Attorney General Reports 251.

term "controlled" means in this context, but it has been interpreted by the staff as requiring structures or other control devices that will not give way under or be flooded by runoff from a ten-year frequency storm, that is, will still perform a control function under storm event conditions of that magnitude. A serious enforcement problem has been encountered with this standard because the regulation does not distinguish among ten-year storms of varying degrees of intensity. For example, a plan may protect against a 10 year-24 hour storm, but not against a 10 year-30 minute storm, and the NRCD staff believes that it does not have authority to require protection from the more intense storm.

Section eight adds additional control requirements in the form of performance standards to protect stream banks and channels down stream from the land-disturbing activity. This performance standard is stated in the regulations as follows:

(a) A combination of storage and controlled release of storm water runoff shall be required for highway construction; commercial, industrial, educational, and institutional developments of one acre or more; for multi-family residential developments of 5 acres or more; and, for single family developments of 10 acres or more. After development of the site, the calculated peak rate of storm water runoff resulting from a ten-year frequency storm shall be no greater than that which would result from a ten-year frequency storm on the same site prior to development.

(b) Detention storage and controlled release will not be required in those instances where the person planning to conduct the activity can demonstrate that the storm water release will not cause an increase in accelerated erosion or sedimentation of the receiving stream or other body of water, taking into consideration any anticipated development of the watershed in question.

Finally, section twelve fixes responsibility for maintaining erosion control and storm water runoff control structures. The responsibility for maintaining erosion control structures during the development of the site is placed on the person conducting the land-disturbing activity; the responsibility for maintaining control devices after site development is completed is placed on the land owner. This maintenance requirement is an essential one for the control of storm water runoff and imposes a large burden of inspection and enforcement on NRCD if land owners are to be given any incentive to maintain the structures and the runoff control measures are to be effective after completion of the project.

III. The Interaction of Federal Flood Insurance Requirements and Sand Dune Protection Programs in Coastal North Carolina

Introduction

As previously noted (page 6), communities in coastal high hazard areas must meet a special set of FIA requirements once stage three of the federal flood insurance program has been reached. Among other things, "the community . . . shall prohibit man-made alteration of sand dunes and mangrove stands within Zones VI-30 on the community's FIRM which would increase potential flood damage."[74]

North Carolina law provides three possible vehicles for protection of sand dunes and regulation of development in coastal high hazard areas: the Coastal Area Management Act; the Sand Dune Protection Law; and traditional local government police powers or land use controls (such as zoning). Depending upon the local situation, various combinations of city, county and/or state agencies may be involved in the implementation of these laws.

This section--after reviewing state and federal law--describes the interaction between federal flood insurance requirements and the several programs of sand dune protection that operate in coastal North Carolina.

North Carolina Law and Regulations

Summarized under this heading are the permits that are required in North Carolina for alteration of sand dunes, the agencies that administer these permits, and the laws that created or authorized the several permit systems.

Required Permits

Two kinds of permits are now required throughout coastal North Carolina before a person can legally alter a sand dune or destroy the vegetation growing on it:

(1) A permit under a 1965 law that authorized coastal counties to adopt sand dune protection ordinances and prohibited damaging or destroying coastal sand dunes without a permit.[75]
(2) A development permit under the Coastal Area Management Act.[76]

---

74. 24 C.F.R. § 1910.3(e)(8).
75. G.S. 104B-4.
76. G.S. 113A-118.

In addition some coastal municipalities, relying on their general police powers, have adopted their own sand dune ordinances that may require an additional permit.

Permit Agencies

The permit agencies under the several dune protection laws are as follows:

(1) Under the Sand Dune Law of 1965--

(a) Any coastal county (but not a municipality) is authorized to adopt sand dune ordinances.[77]

(b) Any coastal county may appoint one or more shoreline protection officers to enforce the dune protection ordinance. Joint officers may be appointed by two or more counties.[78]

(c) Any coastal county may designate a municipal dune protection officer to issue and enforce permits within the municipality, if the municipal governing body approves.[79]

(2) Under the Coastal Area Management Act--

The nature and size of a project determines whether a CAMA development permit is issued and enforced by a local permit officer, usually a building inspector, or a state official who is an employee of the Department of Natural Resources and Community Development (NRCD). CAMA permit-letting jurisdiction is divided as follows:

(a) Minor development permit-letting for projects within areas of environmental concern (which include sand dunes) is the responsibility of local permit officers. These officers will be municipal officials in cities and towns that have elected to issue permits; outside of such municipalities, the officers will be county officials.

(b) Major development permit-letting for projects within areas of environmental concern is the responsibility of the Office of Coastal Management (NRCD).

CAMA defines a "major development" as one that occupies more than 20 acres, occupies a ground area of a structure in excess of 60,000 square feet, contemplates excavation of natural resources, or requires some other state environmental permit. A "minor development," under CAMA, is any development other than a major development.[80]

---

77. G.S. 104B-9.
78. G.S. 104B-6.
79. G.S. 104B-6(a).
80. G.S. 113A-118(c).

(3) Under a police power ordinance--

If a coastal municipality has adopted a sand dune protection ordinance in reliance on its general police powers, any permits required by the ordinance would be issued and enforced by the municipal officials designated in the ordinance, such as a building inspector. (The question whether municipalities can validly adopt and enforce such an ordinance is addressed in the next section.)

Summaries of North Carolina Dune Protection Statutes

The Sand Dune Law: Article 3 of General Statutes Chapter 104B[81] is entitled, "Protection of Sand Dunes Along Outer Banks." It prohibits damaging, destroying or removing any sand dune lying along the outer banks, or any vegetation growing on a dune, without a permit. (Within the meaning of this statute the "outer banks" include the barrier islands of Onslow, Brunswick and New Hanover Counties, as well as the seacoast to the north that is more commonly referred to by this name.)

Under this statute the board of county commissioners of any coastal county may adopt a sand dune protection ordinance establishing a dune protection permit system, spelling out permit applications procedures, and designating one or more shoreline protection officers to administer and enforce the permit system. As indicated earlier, the shoreline protection officers may be officials of the county, of a neighboring coastal county (as a joint officer), or of a municipality within the county.

No permit may be granted unless the permit-letting officer or agency finds as a fact that the proposed action will not materially weaken the dune or reduce its protective effectiveness. The county commissioners may elect to limit the territorial application of the basic prohibition and the permit system to the ocean side of a shore protection line that identifies those dunes that serve as protective barriers.

Violations of the statute or of regulations adopted under its authority by the county commissions are misdemeanors, subject to a $50-$500 fine. Failure to restore a damaged dune or vegetation after written notice constitutes a separate violation for each 10 days' continued failure. And the county commissioners are also authorized to seek injunctive relief to prevent violations or require restoration.

Other provisions of the statute are concerned with duties and inspection and enforcement powers of the shoreline protection officer, inspection fees, taxes to fund the program, appeals' procedure, mapping or description of shore protection lines, and powers of the Environmental Management Commission to advise and assist the counties.

---

81. G.S. 104B-3 to 104B-16.

From 1965 to 1971 only two counties, Carteret and Onslow, are known to have adopted sand dune ordinances under the act. Both of them limited the application of the Act to the protective barrier dunes by establishing shore protection lines.

In 1971 the act was amended to empower the state to take over administration of the act in any county that had not implemented the act by the end of that year.[82] Thus stimulated, the remaining coastal counties all adopted dune protection ordinances. With encouragement from the Attorney General's Office each of these counties elected to apply their ordinances to all sand dunes, from ocean beach to estuarine beach.

CAMA: The basic objective of this act is to establish a comprehensive plan for the protection, preservation, orderly development and management of the coastal area of North Carolina. The thrust of the act is to establish a cooperative state-local program of coastal land management, with planning a local responsibility, critical area designation a state responsibility, and permit-letting and enforcement a joint responsibility.

The three main features of the act were designed to insure that the following would be accomplished by 1978:

First, that each of the 20 coastal area counties will be covered by a land use plan, preferably prepared by local government, and in basic harmony with the plans adopted for the other 19 coastal area counties.[83] This was achieved in 1976.

Second, that all critical areas which need to be considered for protection and possible preservation in each county will have been designated so-called Areas of Environmental Concern or "AEC's."[84] The AEC's have been adopted, effective July 1, 1977.

Third, that any proposed development, change or other use of land within any of the designated areas of environmental concern will be subject to review by means of development permits under the terms of this act.[85] Generally local government handles permits for minor developments and the Coastal Resources Commission (CRC) handles permits for major developments. The permit system became operative March 1, 1978.

A major policy objective of CAMA is simplification and coordination of state permits, preferably through a single or "one-stop" permit for development.[86] Beyond the unification of state permits lies the more ambitious goal of meshing state, local and federal permits.

---

82. G.S. 104B-16.
83. G.S. Chapter 113A, Article 7, Part 2.
84. G.S. Chapter 113A, Article 7, Part 3.
85. G.S. Chapter 113A, Article 7, Part 4.
86. G.S. 113A-125.

The CRC has received two detailed reports on the subject of permit coordination, and has fowarded recommendations on the subject to the General Assembly.[87] The main points of these recommendations are:

(1) That certain administrative steps be taken to simplify and coordinate permits, including development of: (a) a master permit application form for state permits, to be initially processed by NRCD field office permit coordinators; (b) simplified and standardized application processes for state permits; (c) procedures for coordinating CAMA permits and local land use permits.
(2) That legislation be adopted to reduce the overall number of permits by merging with CAMA permits the other exclusively coastal permits--the dredge and fill permits, coastal wetlands orders and sand dune permits.
(3) That the federal government be persuaded to delegate the administration of its dredge and fill (§ 404) permits as a first step in state-federal coordination.

Turning to the critical area or "AEC" process, CAMA directs the CRC to identify AEC's in two stages: interim AEC's and permanent AEC's. The interim AEC stage has been completed and is of no current significance. The permanent designations delineate the areas that are subject to the permit requirements of the Act.

G.S. 113A-113 enumerates a series of categories that may be selected by the Commission as AEC's. In the wording of the statute, the Commission may designate "any one or more of the following, singly or in combination":

(1) Two categories that are particularly relevant to the North Carolina coast, "coastal wetlands" and "estuarine waters," as defined in existing statutes.
(2) Three umbrella categories: renewable resource areas; fragile or historic areas and other areas containing environmental or natural resources of more than local significance; and natural hazard areas. Each of these three general categories is followed by an enumeration of subcategories that, where possible, are tied to existing North Carolina statutory procedures or that are to be identified by experts in the relevant field.

---

87. Heath and Dunn, Report to the Secretary of Natural and Economic Resources Concerning Coordination of Regulatory Permits under the Coastal Area Management Act, (Institute of Government, UNC-CH, 1975); Heath, Dawson and Botvinick, Report to the Secretary of Natural and Economic Resources and the Coastal Resources Commission Concerning Coordination and Consolidation of Regulatory Permits under the Coastal Area Management Act (Institute of Government, UNC-CH, 1976); Coastal Resources Commission, Preliminary Report to the 1977 General Assembly On Developing A Better Coordinated and More Unified System of Environmental and Land Use Permits in the Coastal Area (1976), and Report to the 1977 N.C. General Assembly on Developing a Better Coordinated and More Unified System of Environmental and Land Use Permits in the Coastal Area (1977).

(3) One very general category that speaks in terms of legal concepts: first, the common law concept of "public trust" areas and "areas to which the public may have rights or access"; and secondly, a North Carolina constitutional concept--areas that the State "may be authorized to preserve, conserve, or protect under Article IV, Section 5 of the North Carolina Constitution" (the Environmental Bill of Rights).

(4) One final category of an entirely different nature: "areas which are or may be impacted by key facilities." The term "key facilities" is defined in G.S. 113A-103(6) to include major public facilities (major airports, major highway interchanges major frontage access roads, and major recreational facilities), and certain major private facilities (facilities for generating or transmitting energy).

The Commission adopted permanent AEC's effective July 1, 1977. These AEC's included the two categories listed in item (1) above, and some examples of the categories listed in items (2) and (3). They did not include item (4).

For the purpose at hand the most relevant designations were of ocean hazard areas in the natural hazard area category. Four subcategories were included in this grouping: ocean beaches, frontal dunes, inlet lands, and ocean erodible areas. More specifically, these areas can be identified as follows:[88]

--Ocean beaches extend from the Atlantic Ocean landward to a point where either the growth of vegetation or a distinct change in land form occurs.
--Frontal dunes extend from the landward side of the ocean beach to the lowest elevation in the depression immediately behind the first dune ridge.
--Inlet lands are lands adjacent to inlets having a demonstrated tendency or probability of migrating along the Outer Banks. They have either eroded in the past 25 years or are predicted to erode based on demonstrated erosion rates.
--Ocean erodible lands have been identified by the State Geologist as hazardous to development because of excessive erosion. Based on studies of probable erosion keyed to a 25-year storm surge frequency, these lands have been identified as lying within the area that ranges landward of the toe of the frontal dune a distance of 61' to 156'.

---

88. U.S. Department of Commerce, Office of Coastal Zone Management, State of North Carolina Coastal Management Program and Draft Environment Impact Statement, Washington, D.C., 1978, pp. 149-157. Also, Coastal Resources Commission, State Guidelines for Areas of Environmental Concern. N.C. Administrative Code (NCAC), Title 15, Chapter 7, §§ .0209, .0301-.0307.

A related AEC category extending landward from estuarine waters is the estuarine shorelines. This category was defined by the CRC, based on studies of erosion and flooding, as extending 75' landward from mean high water.

Since March 1978, CAMA permits have been required for development within ocean hazard areas, estuarine shorelines and other AEC's. As previously explained, local permit officers (usually city or county building inspectors) issue the permits for minor developments, while the CRC staff (NRCD employees) issue permits for major developments.

Implementation of the CAMA permit system this year focussed attention on a weak link in the permit simplification effort: CAMA in its present form merely adds one more permit for developments in the sand dune area. CRC has responded to this problem in two ways. First, it has instructed its permit officers to minimize paperwork and red tape for applicants by treating the CAMA permits and the permits under the Sand Dune Law, as nearly as possible, like a single application. It has also sought to persuade the coastal counties to conform their standards for evaluating applications under the Sand Dune Law with CAMA standards. Second, the CRC has instructed its staff to prepare proposed legislation for consideration in 1979 to repeal the Sand Dune Law and make any needed changes in CAMA in order to merge the two permit systems. (This may require more than a simple repeal of the Sand Dune Law, since the Sand Dune Law as presently applied in most counties covers all dunes from ocean to estuarine shore, while CAMA as presently applied covers only the frontal dunes plus the immediately adjacent 25-year storm surge area.)

Municipal police power ordinances: Both municipalities and counties by statute are granted broad general police powers to adopt ordinances that define, prohibit, regulate or abate acts, omissions or conditions detrimental to the health, safety or welfare of its citizens.[89] In each case the statutes direct that these powers be broadly construed.[90] There is a good possibility that a carefully drafted municipal dune protection ordinance would be held to be an appropriate and valid exercise of these general police powers.[91] At least two North Carolina coastal cities, Wrightsville Beach and Nags Head, reportedly have dune protection ordinances.[92]

One question has been raised about municipal dune protection ordinances, however, from another perspective. The Sand Dune Law sets forth a comprehensive scheme for local regulation of activities that

---

89. G.S. 160A-174(a) for cities, and G.S. 153A-121(a) for counties.

90. G.S. 160A-4 for cities, and G.S. 153A-104 for counties.

91. Eugene McQuillin, The Law of Municipal Corporations (3rd ed., 1969 Revised Volumes). Callaghan and Co., Mundelein, Illin. §§ 18.07, 24.334, 24.541.

92. Conversation with N.C. Office of Coastal Management, July 24, 1978.

alter sand dunes. This regulatory scheme allocates enforcement powers to both cities and counties, but ordinance powers only to counties. From these circumstances an inference could be drawn that pre-emptive ordinance powers are given to counties, and cities are excluded from adopting dune protection ordinances. This inference is reinforced by the fact that the 1965 revision of the Sand Dune Law eliminated a former provision in G.S. 104B-4 that authorized municipalities as well as counties to grant permits for alteration of dunes. The Attorney General's Office has adopted the pre-emption position and has informally advised the County Attorney of New Hanover County that, in light of the Sand Dune Law, cities do not have the authority to adopt separate dune protection ordinances.[93]

A contrary inference may be drawn from CAMA, which treats cities and counties essentially on a par with respect to planning, ordinance-making and enforcement of coastal area land use regulations. The city council of Wrightsville Beach has reportedly relied on this inference in rejecting the argument that the Sand Dune Law pre-empted the city's authority to have its own sand dune ordinance, in connection with an appeal from an action under the Wrightsville Beach dune ordinance.[94]

Federal Flood Insurance Requirements

Sand Dunes and V-Zones: As previously noted, FIA regulations require that communities in areas subject to coastal flooding, or "coastal high hazard areas," must meet a special set of construction requirements for stage three of the federal flood insurance program. (See p. ___ above.) Of particular relevance to the subject of dunes is §1910.3(e)(6) of the FIA regulations, which requires that "the community shall. . . (6) prohibit man-made alteration of sand dunes and mangrove stands within zones VI-30 on the community's FIRM which would increase potential flood damage." (The "FIRM" is the flood insurance rate map proposed by FIA. "Zones VI-30" are velocity zones that comprise the coastal high hazard area; to put it another way, they are areas of special flood hazard that are inundated by tidal floods.)

V-zones have been designated by FIA for some coastal communities in two areas: along the ocean front and along the estuarine shorelines. The ocean-front V-zones generally will be comparable to, but somewhat larger than the total area covered by the AEC's for ocean beaches, frontal dunes and ocean erodible lands. (A typical ocean-front V-zone might cover all of the area seaward of the ocean-front road.) The estuarine shoreline V-zones will generally be more extensive than the 75-foot estuarine shoreline AEC's.

---

93. Letter opinion from the Office of the Attorney General (Amos Dawson, Assistant Attorney General) to County Attorney James Fox, New Hanover County.

94. Conversation with Wrightsville Beach's chief building inspector, John Nesbitt, July 26, 1978.

Since FIA and CRC develop their standards independently, there are likely to be two kinds of discrepancies between V-zones and AEC's: differing standards and differing boundaries. The N.C. Office of Coastal Management believes that it can handle the relatively minor adjustments necessary to bring the ocean front AEC's and V-zones into conformity. The Office is more concerned about the discrepancies between the estuarine shoreline AEC's and V-zones. There appear to be at least three possible ways to eliminate the discrepancies: The CRC could modify its AEC boundaries and standards; the FIA could modify its V-zone boundaries or accept the CRC's agreement to meet FIA standards within AEC's; or the affected communities could create special management areas that would effectively enlarge the AEC's to coincide with the V-zones and make FIA standards applicable within these areas. (Obviously, there could be several combinations of give-and-take involving standards and boundaries.) Another possibility is for the affected communities to adopt ordinances accepting FIA standards in V-zones and creating another separate permit system to implement these standards, without regard to the CAMA permit system.[95]

A key consideration for the effective administration of CAMA is permit simplification. If the CRC succeeds in its effort to bring order out of the chaos of sand dune permits under CAMA and the Sand Dune law, only to have communities in the area establish one or more new permit systems in the same area in response to the prodding of FIA, little will have been accomplished. Thus, there is much to be said for a mutually agreeable solution concerning boundaries and standards adopted by CRC and essentially acceptable to FIA. CRC's monitoring and reinforcing of locally administered permit systems should provide an important incentive to FIA in this respect, because lack of reliable enforcement is a generally acknowledged weakness of the FIA program.

A-Zones: All communities, beginning with stage two of the federal flood insurance program, must meet certain requirements concerning construction and improvements within areas of special flood hazard or "A-zones" as designated on FIA maps. (See pages _____ for summary of requirements.) The A-zone is the 100-year flood plain, or the land in the community's flood plain subject to a 1% or greater chance of flooding in any given year.

A-zones have been designated by FIA for some coastal communities. These zones may partially coincide with some of the estuarine or coastal wetland AEC's, but they will not coincide at all with any of the ocean front AEC's.

Unless the CRC exercises its dormant powers to activate floodplain or floodway AEC's, there is little likelihood that FIA A-zones can be effectively regulated under CAMA. There are at least two other ways in which A-zones could be implemented: affected communities could each independently adopt ordinances that meet the FIA requirements in A-zones,

---

95. Conversation with Officials of FIA and the N.C. Office of Coastal Management, July 13, 1978.

or the State Building Code might be modified by the addition of an appendix that would adopt FIA A-zone requirements, either statewide or in the coastal area. The Building Code amendment approach has the advantage of avoiding an additional permit requirement and of greatly simplifying the task of obtaining and maintaining regulations that meet FIA's requirements. If a Building Code appendix were approved by the Building Code Council for local adoption, this could provide in effect a model ordinance for adoption by such localities as might see fit.

IV. Flood Plain Regulation and the Taking Issue

Land use regulation for any purpose is an exercise of the police power.[96] A threshold constitutional requirement that any land use regulation--or for that matter, any other type of regulation under the police power--must meet is that it must bear a substantial and reasonable relation[97] to the public health, safety, morals, or general welfare in order to satisfy the substantive due process requirements of the North Carolina[98] and United States[99] Constitutions. There are few hard and fast rules in this area, and it would appear that the best weapon in overcoming an attack on the constitutionality of a land-use regulation based on the ground that it fails to satisfy substantive due process requirements is a carefully drawn brief that marshalls all the factual data concerning the regulation and the objectives to be achieved thereby and relates those facts and objectives to one or more of the constitutional circles of the police power: public health; public safety; public morals; or the general welfare.

In a leading law review article[100] on flood plain regulations, Professor Allison Dunham suggested at least three possible bases in support of land-use regulation to control flood hazards. First, free choice as to occupancy and use of a flood plain should be restricted by government because the use by one owner may harm other owners.[101] This advocates use of the police power to control nuisances, a long-accepted

---

96. Euclid v. Ambler Realty Co., 272 U.S. 365, 387 (1926).

97. See State v. Brown, 250 N.C. 54, 108 S.E.2d 74 (1959) and In re Appeal of Parker, 214 N.C. 51, 197 S.E. 706 (1938), appeal dismissed, 305 U.S. 568 (1938). This requirement is variously stated as "some relation," a "reasonable relation," a "substantial relation," or a "reasonable and substantial relation." The last-stated formula was apparently the one applied in State v. Anderson, 275 N.C. 168, 166 S.E.2d 49 (1969), one of the most recent cases upholding an exercise of the police power, and since it seems to be the one currently in vogue, it is the one given here. Although that case did not involve a land use regulation--it upheld a state requirement that motorcycle riders wear protective helmets--it is an excellent illustration of how the court approaches a novel exercise of the police power, and, incidentally, a good guide of how to prepare a brief in such a case. First, the court stated the presumption that the act is constitutional until the contrary is clearly shown. Second, it reviewed decisions of other states upholding similar regulatory statutes. Then, it looked to federal action in the same area, and finally it examined the factual data marshalled to support the connection between the regulation and the public safety.

98. N.C. Const. art. I, § 19.

99. U.S. Const. amend. XIV.

100. Dunham, Flood Control Via the Police Power, 107 U. Pa. L. Rev. 1098 (1959).

101. Id. at 1110.

purpose.[102] Second, since a landowner may be unable or unwilling to make a rational choice concerning the use of his land, government must protect him from the harmful consequences of his decision.[103] A basis related to this one is the prevention of fraud in regard to land transactions in the flood plain.[104] Third, restricted occupancy of a flood plain will promote welfare by reducing expenditures for flood prevention and for disaster relief and by reducing the subsidy necessary to secure "reasonable" rates for flood insurance.[105] After discussing these various bases, Dunham concludes that standard zoning enabling acts can probably be stretched to include flood plain zoning[106] and that flood plain regulation generally can withstand attacks as violating substantive due process.[107]

Introduction

Once having established that various types of flood plain land-use regulations are a valid exercise of the police power as a general matter, the next major legal question that must be confronted is what considerations are relevant to a complaint by an individual landowner that as applied to his property the regulations amount to a taking of that property for a public use without compensation. It is well to bear in mind that different types of regulations for different types of land areas may be involved, and that these differences will be of major importance in a court's decision on whether or not a taking has occurred. Viewing the regulations as occupying a spectrum from most stringent to least stringent, we may place in the former category zoning or encroachment regulations that prohibit the construction of all structures and all dredging and filling in the designated floodway itself and in the upstream natural storage areas. More towards the middle of the spectrum are zoning regulations for the floodway and natural storage areas that allow some construction and development under strictly controlled permit conditions. The least stringent regulations are zoning and subdivision regulations for the floodway fringe that condition development of the land on certain precautionary measures being taken. Also to be considered are regulations that attempt to deal with nonconforming uses in the floodway, perhaps with the objective of phasing them out over a period of several years. To be considered separately are regulations that attempt to deal with flooding in the coastal area and involve either dune or other natural barrier protection, or building regulations, such as set-back requirements and elevation requirements.

---

102. Id. at 1111. See also J. Kusler, A Perspective on Flood Plain Regulations for Flood Plain Management 38 (1976).
103. Dunham, supra note 100, at 1112.
104. See J. Kusler, supra note 102, at 38.
105. Dunham, supra note 100, at 1116.
106. Id. at 1119.
107. Id. at 1128.

The Fifth Amendment to the United States Constitution expressly provides that private property shall not be taken for public use without just compensation,[108] but this restraint applies only to the federal government. The Fourteenth Amendment has been held to apply a similar restraint to the states.[109] Although the North Carolina Constitution does not contain an express provision prohibiting the taking of private property for a public use without compensation, the North Carolina Supreme Court has held that such a prohibition is subsumed by the "law of the land"[110] clause contained in Article I, § 19 of the constitution.[111] Despite the language in court decisions concerning "just compensation," when a suit is brought attacking a land-use regulation on the ground that it amounts to a taking, the remedy usually sought is a declaration that the regulation is invalid as applied to the land in question; only rarely is the suit brought as an inverse condemnation action in which actual payment is sought for the condemnation of some sort of easement in the land.[112]

Although both federal and state constitutional provisions are relevant to the taking issue, and under most circumstances a constitutional challenge could be brought in federal as well as state courts, the discussion here will concentrate for the most part on state judicial decisions for two reasons. First, it is more likely that a challenge will be brought in state court because the typical way in which a taking challenge arises is that an affected landowner either violates a zoning ordinance and is prosecuted or he undertakes some activity without a required permit and is prosecuted. Of course, the federal constitutional issue may be raised in state court, but because a state court is likely to pay more attention to state law and because the state constitutional principles are very similar to the federal ones, the decision will very likely turn on the state constitutional issue. Second, there have not been many helpful cases decided by the United States Supreme Court in this area, and until the Penn Central[113] case was decided in the spring of 1978, the most recent decision on the taking issue was a 1962 case.[114] Relevant federal cases will of course be discussed where they may shed light on the issues under consideration.

---

108. "[N]or shall private property be taken for public use without just compensation."

109. Chicago, Burlington & Quincy R. R. v. Chicago, 166 U.S. 226 (1897).

110. "No person shall be taken, imprisoned, or disseized of his freehold, liberties, or privileges, or outlawed, or exiled, or in any manner deprived of his life, liberty, or property, but by the law of the land."

111. See, e.g., Debruhl v. State Highway and Public Works Comm'n, 247 N.C. 671, 102 S.E.2d 229 (1958).

112. D. Godschalk, D. Brower, L. McBennett, and B. Vestal, Constitutional Issues of Growth Management 61 (1977).

113. Penn Central Transportation Co. v. New York, 46 U.S.L.W. 4856 (June 26, 1978).

114. See Goldblatt v. Town of Hempstead, 369 U.S. 590 (1962).

The question of when does an apparently reasonable and valid regulation--when applied to a particular property owner--become a "taking" of property is one that is present throughout the law of land-use regulation. The issues of social policy underlying this constitutional question have been summarized by Professor Frank Michelman as follows:

> Such questions as those of distinguishing the "police power" from the "power of eminent domain" and of calculating "just compensation" thus seem to derive from a broader question: When a social decision to redirect economic resources entails painfully obvious opportunity costs, how shall these costs ultimately be distributed among all members of society? Shall they be permitted to remain where they fall initially or shall the government, by paying compensation, make explicit attempts to distribute them in accordance with decisions made by whatever process fashions the tax structure, or perhaps according to some other principle? Shall the losses be left with the individuals on whom they happen first to fall, or shall they be "socialized?"[115]

In attempting to draw the line between constitutional regulation and unconstitutional taking, the courts have used several approaches.[116] One such approach requires compensation when the property is physically invaded.[117] Most courts would agree today that compensation should be paid when the land is physically occupied, but the test is not very helpful in determining when restrictions short of physical occupation require either compensation or invalidation, and the test is little used today.[118] A second approach is that of asking whether the activity regulated is a noxious use, that is, whether it is harmful to the public health or safety.[119] Under this approach the activity is, in essence, treated as a nuisance that can be regulated out of existence without compensation.[120] This approach may have some usefulness in the flood plain context and will be discussed subsequently. A third approach, a more elastic one, is the magnitude of loss or diminution of value theory,[121] which had its origin in Justice Holmes's opinion in Pennsylvania Coal Co. v. Mahon.[122] This approach asks how much the value of the

---

115. Michelman, Property, Utility, and Fairness: Comments on the Ethical Foundations of "Just Compensation" Law, 80 Harv. L. Rev. 1165 (1967).

116. See Berger, A Policy Analysis of the Taking Problem, 49 N.Y.U.L. Rev. 165 (1974) and Sax, Takings and the Police Power, 74 Yale L.J. 36 (1964).

117. Berger, supra note 116, at 170.

118. Id.

119. Id. at 172.

120. Cases in which this approach has been used are Hadacheck v. Sebastian, 239 U.S. 394 (1915), where a brickyard around which a residential neighborhood had grown up was shut down, and Goldblatt v. Town of Hempstead, 369 U.S. 590 (1962), in which gravel extraction inside a municipality was stopped.

121. Berger, supra note 116, at 175.

122. 260 U.S. 393 (1922).

property has been diminished by the regulation and then balances the magnitude of private loss against the public gain to be achieved by the regulation.[123] This is probably the approach most often used, and it appears to be used in traditional zoning cases in North Carolina.[124] Each of the three approaches has some usefulness, but none will stand of universal application, and, in fact, Professor Michelman has demonstrated through close analysis that they will not hold up ethically or logically when subjected to careful scrutiny.[125] Nonetheless, they are the tools the courts have selected to deal with the question.

North Carolina Decisions

With this general background in mind, we can turn to an examination of the relevant North Carolina decisions. As early as 1877, in Pool v. Trexler,[126] the court distinguished the police power from the power of eminent domain. The legislature had enacted a statute[127] regulating in some detail the draining of wetlands and establishing a procedure for sharing the costs and benefits among the landowners affected. Suit was brought attacking the portion of the act requiring an assessment of the affected landowners as a taking of private property without compensation. In upholding the statute, the court stated: "Every citizen holds his land subservient to such 'police regulations' as the General Assembly may in its wisdom enact in order to promote the general welfare."[128] The court also stated: "These two powers, 'eminent domain' and 'police regulations,' are distinct, and yet they are frequently confounded. By the one, the property of A is given to B. By the other, the property of A is left in him, but is made subservient to the general welfare."[129]

---

123. Sax, supra note 116, at 37.

124. See Helms v. Charlotte, 255 N.C. 647, 122 S.E.2d 817 (1962), discussed more fully below.

125. See Michelman, supra note 115. Michelman is especially concerned with the question of fairness to property owners in the regulatory context. He draws heavily on the ideas of John Rawls, most of which are expressed in his book, A Theory of Justice (1971). Several other commentators have in recent years criticized the judicial techniques used in dealing with the taking question and have suggested alternative approaches. See, e.g., Berger, supra note 116, Sax, Takings, Private Property and Public Rights, 81 Yale L.J. 149 (1971), and Costonis, "Fair" Compensation and the Accommodation Power: Antidotes for the Taking Impasse in Land Use Controversies, 75 Colum. L. Rev. 1021 (1975). See also F. Bosselman, D. Callies, and J. Banta, The Taking Issue 53-138 (1973), where it is persuasively argued that the taking issue has no basis in English or early American constitutional history, but was erroneously grafted to the 14th Amendment by Justice Holmes in Mahon. In their view, the regulation of land use, as distinguished from the actual appropriation of land--if otherwise constitutional--should never be held a "taking" of property.

126. 76 N.C. 297 (1877).

127. Ch. 39, Battle's Revisal of Public Statutes of N.C. (1873).

128. 76 N.C. 297.

129. Id. at 298.

A 1917 case, State v. Perley,[130] tested the validity of a regulation designed to protect public water supplies. Chapter 56, Public Laws of 1913, made it a criminal offense to cut timber and leave the tree tops, boughs, and other portions unfit for commercial purposes within 400 feet of the boundary line of a watershed for a public water supply. Perley cut a stand of timber on land on which he owned the timber rights and left slash within 400 feet of the watershed of the water supply for the city of Asheville. After being indicted and convicted under Chapter 56, Perley appealed his conviction, alleging that the statute was arbitrary, unreasonable, and amounted to a deprivation of liberty and property without due process of law. The North Carolina Supreme Court found the statute to be reasonably calculated to protect the watershed of a public water supply against fire and the concomitant damages of erosion and silting and upheld the conviction. It is important to note that the regulation involved in this case was a public health measure the purpose of which was the protection of public water supplies. It is also significant that the opinion contains language characterizing the prohibited activity as "capable of becoming a nuisance." Once a court is successful in characterizing the activity regulated out of existence a nuisance, or noxious use, the regulation will stand, regardless of the economic loss to the property owner,[131] but almost any activity is "capable" of becoming a nuisance, given the right circumstances, so perhaps little weight should be attached to this statement by the court. That the court had a solid grasp of the necessity for land-use regulation in furtherance of the public welfare is shown by the following statement:

> Every citizen derives his title to the property from the sovereign, which with us is the State, and he acquires it upon the implied condition that it shall be held subject to all necessary or reasonable regulations in promotion of the public interest. Each citizen reaps an advantage, or substantial benefit, from the fact that all property is thus held, as the principle is a protection to his own as well as to that of others. It enhances its value, too, because his neighbor must so use his premises as not to injure him in the employment of rights pertaining to his ownership of adjacent land. The rights, the duties, and the advantages, therefore, are all reciprocal. The enforcement of this law is a distinct benefit to all as much so, though not always in the same degree, as laws enacted for our personal safety and freedom from the annoyance of others. Private convenience must consequently give way to the public good in the interest of all, and in order that government may be administered, not for one, or even a few, but to benefit all who have equally a claim upon its protection.[132]

---

130. 173 N.C. 783, 92 S.E. 504 (1917), aff'd, 249 U.S. 510 (1919).

131. See, e.g., Hadacheck v. Sebastian, 239 U.S. 394 (1915) and Consolidated Rock Products Co. v. City Los Angeles, 370 P.2d 342 (1962), appeal dismissed, 371 U.S. 36 (1962).

132. State v. Perley, 173 N.C. 783, 787, 92 S.E. 504, 506 (1917). A more recent case upholding land use regulations designed to protect a public water supply is Hudson v. Morganton, 205 N.C. 353, 171 S.E. 329 (1933).

The Pool and Perley cases show at the very least that the North Carolina Supreme Court at a relatively early date recognized the validity of certain types of restrictions on the use of private property lying within designated watersheds and affirmed the principle that property owners hold their land subject to reasonable regulations imposed in furtherance of the general welfare.

The power of cities and counties to regulate land use within their jurisdictions through the use of comprehensive zoning ordinances is firmly established in North Carolina.[133] Since land-use regulations aimed at controlling development in the flood plain will draw heavily upon zoning techniques and procedures, and in many instances may be a part of a comprehensive zoning ordinance, it will be instructive to examine the legal principles relevant to the taking issue that have been derived from cases in which a zoning ordinance has been challenged. In deciding cases in which a zoning ordinance is attacked as unreasonable or arbitrary, the court begins with a presumption of the validity of the ordinance. A good statement of this is in In re Appeal of Parker:[134]

> When the most that can be said against such ordinance is that whether it was an unreasonable, arbitrary or unequal exercise of power is fairly debatable, the courts will not interfere. In such circumstances the settled rule seems to be that the court will not substitute its judgment for that of the legislative body charged with the primary duty and responsibility of determining whether its action is in the interest of the public health, safety, morals, or general welfare.[135]

The effect of this presumption in taking cases is uncertain; probably it means no more than that the landowner has the burden of proof in showing a taking.

In the Parker case, the court first stated the principle that serious depreciation of the value of the property by enforcement of a zoning ordinance would not--by itself--cause the ordinance to be invalidated.[136] It has since affirmed that principle in Zopfi v. City of Wilmington (change in ordinance to permit apartments and shopping center to be

---

133. See N.C. Gen. Stats. §§ 153A-320 through 153A-347 (counties) and N.C. Gen. Stats. §§ 160A-360 through 160A-392 (cities). See also Euclid v. Ambler Realty Co., 272 U.S. 365 (1926), the landmark case upholding a comprehensive zoning ordinance as a valid exercise of the police power; compare Nectow v. Cambridge, 277 U.S. 183 (1928), a case invalidating a zoning ordinance as applied to plaintiff's land because the classification as drawn bore no substantial relation to health, safety, morals, or the general welfare.

134. 214 N.C. 51, 197 S.E. 706 (1938), appeal dismissed, 305 U.S. 568 (1938).

135. Id. at 55, 197 S.E. 706, at 709.

136. 273 N.C. 430, 160 S.E.2d 235 (1968).

constructed near single family residences), Michael v. Guilford County[137] (refusal to rezone property at end of an airport runway from residential to industrial when overflights had rendered property unfit for residential purposes), and Durham County v. Addison[138] (property owner prevented from constructing a combination grocery store-service station on his land). Although a zoning ordinance may constitutionally cause substantial economic loss to a landowner, apparently it cannot deprive him of all profitable use of his property; that is, it will not be permitted to render his land valueless. The leading case on this point is Helms v. City of Charlotte.[139] The plaintiff's lot in that case was located in a district zoned for residential uses, and he sought permission to build a small office building on the lot. Permission was denied. Plaintiff appealed this refusal and its affirmance by the trial court on the ground that the ordinance was invalid as applied to him because his lot was worthless if restricted to residential uses.[140] The court stated that from the facts in the record it could not determine whether the lot had any reasonable value for residential purposes, and it remanded the case with a direction that more evidence be taken on this point, but it agreed with the plaintiff that the real issue was: "Is it practical to use the lots for residential purposes and do they have any reasonable value for residential use under zoning regulations, the building code and other pertinent circumstances?"[141] If the trial court found the answer to that question to be, no, then as to the plaintiff the ordinance was, indeed, invalid.

Professor Glenn, in a discussion of the Helms case, rather persuasively argues that the court is not looking merely at the diminution of the value of the property, but is balancing the loss of value to the landowner against the public benefit to be secured by the regulation.[142] What the court has in effect done, Professor Glenn argues, is to say that if the benefit secured by zoning plaintiff's property residential is small compared to the harm inflicted on plaintiff by the regulation a taking has occurred. Although there is no express language in Helms to the effect that the court is using a balancing test, the court's approach to the facts indicates that it is, and in any event, when Helms is read together with the Zopfi, Michael, and Addison cases, a strong inference can be drawn that diminution of value alone does not cause a taking and that the court is willing to look at other factors than just harm to the

---

137. 269 N.C. 515, 153 S.E.2d 106 (1967).

138. 262 N.C. 280, 136 S.E.2d 600 (1964).

139. 255 N.C. 647, 122 S.E.2d 817 (1962).

140. Because of the dimensions of plaintiff's lot, a residential structure could not be built on it without a variance from both the zoning ordinance and the building code. Much of the property in the area was devoted to industrial uses. Also a portion of plaintiff's property was subject to periodic flooding by an adjacent creek.

141. 255 N.C. 647, 656, 122 S.E.2d 817, 824.

142. Glenn, The Coastal Area Management Act in the Courts: A Preliminary Analysis, 53 N.C.L. Rev. 303, 330 (1975).

landowner. This suggests that in cases in which the taking issue is raised, attorneys for the regulating agency should be able to make good use of arguments concerning the public harm and costs generated by the unregulated use of the land in question and of the public benefits to be secured by the regulation.[143]

It seems quite likely that in many situations flood plain regulatory measures will have to deal with the problem of the nonconforming use. In these cases, structures will have already been placed in the flood plain, or other activities will have been undertaken before the effective date of the regulation. Can these structures or activities be removed or stopped immediately upon the effective date of the ordinance, or failing that, can they be phased out over some period of time? No North Carolina judicial decision has squarely held that existing nonconforming uses must be permitted to continue after the effective date of the zoning ordinance in question, and in fact, two cases have upheld ordinances that required filling stations to be discontinued at locations they had occupied for considerable periods of time.[144] These decisions were based largely on the "nuisance-like" nature of service stations and the need for regulating them in the interests of public safety, however, and should not be taken as precedent for allowing an ordinance to require the immediate discontinuance of all nonconforming uses. Moreover, two other cases have intimated that zoning ordinances not allowing for the continuance of nonconforming uses--at least for a time--might encounter constitutional difficulties.[145] The service station cases certainly support the position that a flood plain regulation ought to be able to order the immediate discontinuance of an activity or removal of a structure if a convincing case can be made that it is a nuisance, or would become one in the event of flood conditions.

Many zoning ordinances provide for the continuation of nonconforming uses, but provide that they may not be enlarged or extended; such restrictions have been upheld.[146] The North Carolina court has also upheld, in State v. Joyner,[147] an ordinance that required the discontinuance of a nonconforming use within three years, and this appears to be in line with a majority of the courts that have considered the issue.[148] In

---

143. See Glenn, supra note 142, at 333 for a discussion of the way such arguments might be used in support of the Coastal Area Management Act.

144. Ahoskie v. Moye, 200 N.C. 11, 156 S.E. 130 (1930), appeal dismissed, 283 U.S. 810 (1931) and Wake Forest v. Medlin, 199 N.C. 83, 154 S.E. 29 (1930).

145. See In re O'Neal, 243 N.C. 714, 720, 92 S.E.2d 189, 193, (1956) and Elizabeth City v. Aydlett, 201 N.C. 602, 161 S.E. 78 (1931).

146. In re O'Neal, 243 N.C. 714, 92 S.E.2d 189 (1956).

147. 286 N.C. 366, 211 S.E.2d 320 (1975).

148. See, e.g., Spurgeon v. Board of Commissioners of Shawnee County, 181 Kan. 1008, 317 P.2d 798 (1957) and Grant v. Mayor and City Council of Baltimore, 212 Md. 301, 129 A.2d 363 (1957), and Comment, Amortization of Nonconforming Uses, 7 Wake Forest L. Rev. 255 (1971).

Joyner, the defendant was operating a building material salvage yard after the three-year grace period had expired in violation of the ordinance. It should be noted that although the defendant was undoubtedly inconvenienced and put to some expense in relocating his business, he was not completely put out of business; moreover, the landowner was apparently left with other valuable uses of the property.

Subdivision Regulations

Subdivision regulation is a form of land-use regulation closely related to zoning, and in many circumstances it will be useful in controlling development in the flood plain. The typical subdivision ordinance requires--pursuant to a state enabling act[149]--that before a tract of land can be subdivided and the lots sold, a subdivision plat must be approved by a planning board or similar agency and recorded in the office of the register of deeds. It is unlawful to sell lots by reference to the plat until it has been approved and recorded.[150] Traditional exactions required of the subdivider before the plat will be approved have included street dedications;[151] recently many ordinances have required the dedication of land or the payment of fees for parks and schools.[152] Generally these exactions, or conditions to development, have been upheld on the ground that the subdivider is only being required to assume a fair share of the additional costs the development will impose on the community.[153] Although some cases have held that local governments may impose stricter controls in subdivision regulations than in zoning or other types of land-use regulations because the subdivision of land is a "privilege,"[154] this seems analytically unsound,[155] and the same constitutional tests, including taking, that are applicable to other types of regulations are likely to be held applicable to subdivision regulations.[156] Nevertheless, it would appear that courts will extend somewhat greater leeway to a local government in reviewing subdivision ordinances if only because the use of the land--subdivision--is not being prohibited, but rather is being conditioned on the performance of certain duties by the developer. So long as those conditions are not arbitrary, the ordinance should be upheld.

---

149. See, e.g., N.C. Gen. Stats. §§ 160A-371 through 160A-376.

150. See N.C. Gen. Stats. § 160A-375.

151. Heyman and Gilhool, The Constitutionality of Imposing Increased Community Costs on New Suburban Residents Through Subdivision Exactions, 73 Yale L.J. 1120, 1130 (1964).

152. Id. at 1134.

153. Id. at 1134 et seq.

154. See, e.g., Billings Properties, Inc. v. Yellowstone County, 144 Mont. 25, 394 P.2d 182 (1964).

155. Heyman and Gilhool, supra note 151, at 1130.

156. Id.

Coastal Area Regulations

Land-use regulation to control flood damages in the coastal area has several aspects that set it apart from land-use regulation to protect against riverine flooding. For one thing, private ownership of the land stops at the mean high-tide line, and title to the land seaward of that line, the foreshore, remains in the state.[157] Also, several state regulatory programs already are in existence that in one way or another can be utilized to protect against flood hazards. These are the Coastal Area Management Act,[158] especially the provisions authorizing the designation of areas of environmental concern,[159] the control of dredging and filling,[160] and the act protecting sand dunes along the Outer Banks.[161] This is not to say that taking questions may not arise with regard to existing state programs, but rather to point out that there are comprehensive state programs aimed at preserving dunes, vegetation, and natural areas along the coast, and that these programs are strong evidence of a paramount public purpose in support of the regulations that extends beyond control of flood damage. The availability of factual data regarding actual damage caused by hurricanes and other storms over the years, and the plainly demonstrated need for control measures can also be used to butress support for regulation. A typical regulation that has been upheld in other states[162] is an ordinance establishing a setback line seaward of which no buildings may be constructed. It would also seem that such devices as requiring buildings to be elevated and floodproofed would be upheld if reasonable under the circumstances.

Decisions from Other States

Since there are no North Carolina cases dealing with the taking issue in the context of flood plain regulation, it will be useful to examine some of the leading cases from other states, cases to which the North Carolina court would likely turn for guidance. Two cases decided in the early 1960's invalidated the regulations in question. In Dooley v. Town Plan and Zoning Commission of Fairfield,[163] the town had zoned a portion of the flood plain of a tidal creek as flood plain district. Among the permitted uses in the district were parks, marinas, and farming. No residential building was permitted and there could be no excavation or filling without a special exception. Testimony showed that the

---

157. See Carolina Beach Fishing Pier, Inc. v. Town of Carolina Beach, 277 N.C. 297, 177 S.E.2d 513 (1970).

158. N.C. Gen. Stats. § 113A-100 et seq.

159. N.C. Gen. Stats. § 113A-113.

160. N.C. Gen. Stats. § 113-229.

161. N.C. Gen. Stats. § 104B-3 et seq.

162. See, e.g., Spiegle v. Beach Haven, 46 N.J. 479, 218 A.2d 129 (1966) and Godson v. Town of Surfside, 8 So.2d 497 (Fla. 1942).

163. 151 Conn. 304, 197 A.2d 770 (1964).

ordinance depreciated the value of the plaintiff's land by at least seventy-five per cent. The court held that the effect of the zoning classification was to preserve the plaintiff's land in its natural state and amounted to a confiscation of the land. Although it is unclear whether the court based its decision on a diminution of value theory or upon some other theory, the court did say that most of the value of the plaintiff's land had been sacrificed for the community welfare and the plaintiff did not directly benefit from the evil avoided. Nothing was said in the opinion about the additional cost burden on the town from flooding of residences built in a flood hazard area, or the extensive filling necessary to make the plaintiff's property buildable.

In Morris County Land Improvement Co. v. Parsippany-Troy Hills,[164] the land area in question was a 1,500 acre swamp located in a rural corner of a rapidly developing area of a New Jersey township. The swamp served as an important natural storage area for flood waters and was secondarily important as a wildlife habitat. Plaintiff owned 66 acres of the swamp and was engaged in the sand and gravel business in the area. In 1960, the defendant township zoned the area as a Meadows Development Zone. Among the uses permitted in the zone were farming, the raising of aquatic plants, fish, and fish food, and hunting and fishing preserves. A complex set of regulations effectively prohibited dredging and filling. This meant that there could be no building or development in the swamp because--owing to the soil conditions and the high water table--some filling was necessary for any type of construction. The court held that the zoning ordinance had the effect of freezing plaintiff's land in its natural state to secure two important public benefits: flood control and the protection of wildlife habitat. This amounted to a taking of plaintiff's property. This case is sometimes cited as one in which flood plain regulations were held to be a taking, but it is important to note that the primary objective of the regulations involved here was to preserve a natural storage area rather than the control of development in the floodway.

Two[165] more recent cases have upheld flood plain regulations in the face of challenges that they constituted a taking of property. Parenthetically, we should like to caution against seeing a trend developing

---

164. 40 N.J. 539, 193 A.2d 232 (1963).

165. A third, related case that is often looked to with approval by environmentalists and other land-use regulators is Just v. Marinette County, 56 Wisc.2d 7, 102 N.W.2d 761 (1972). Just involved a shoreland zoning ordinance that prevented the landowner from filling his property riparian to a lake. Factors that appear important to the court in sustaining the validity of the ordinance are that the ordinance was part of a state program to protect wetlands and natural areas and to reduce water pollution, approval of the ordinance by a state agency, the relatively well-developed public trust doctrine in Wisconsin concerning navigable waters, and the fact that in looking at the diminution of the value of the property the court looked at its value in its natural state, rather than its speculative value after being filled.

because the more recent leading cases have upheld the regulations. Several things may account for the different decisions: First, as will be pointed out, there are factual differences that may well be significant; second, the courts may be responding to an increased awareness in society generally of the need to regulate the use of land to protect natural resources;[166] and third, the advocates on behalf of the units of government may have been more resourceful and imaginative in presenting their arguments concerning the necessity for the regulation and the harm and costs borne by the community if the land remained unregulated.

The land in question in Turner v. County of Del Norte[167] was 31 acres in the flood plain of the Klamath River. Since 1927 the area had been flooded four times. Plaintiff's land was partially flooded in 1927 and 1953, and completely covered by flood waters in 1955 and 1964. After the 1964 flood, the county arranged with the Army Corps of Engineers to take flood control measures. In return for its assistance in the project, the Corps insisted upon management of the flood plain of which plaintiff's land was a part to prevent encroachments thereon. In 1966 the county enacted a zoning ordinance that prohibited permanent residences and commercial or public buildings on plaintiff's land. Uses permitted on the land included parks and recreational developments, boating facilities, campgrounds, trailer parks, and agricultural uses. Plaintiff wanted to subdivide his land and brought an inverse condemnation action, alleging that by the ordinance the county had taken his property. The court held the ordinance valid and stated that no taking had occurred. The court said: "The zoning ordinance in question imposes no restrictions more stringent than the existing danger demands. Respondents may use their lands in a number of ways which may be of economic benefit to them."[168] In this case it is important to note that the area regulated was subject to periodic and severe flooding; there was no question that it was in the floodway. Also, the land-use measures were part of a larger flood control scheme and were necessary to secure the assistance of the Army Corps of Engineers.

In Turnpike Realty Co. v. Town of Dedham,[169] the town, in 1963, changed the zoning of plaintiff's 62 acres riparian to the Charles River and the Mother Brook from residential to flood plain district, thereby prohibiting the erection of any permanent structures. Permitted uses included agriculture and recreation. The evidence showed that plaintiff's land was subject to periodic flooding from the Charles and that it also served as a natural storage area. In alleging that the ordinance

---

166. See F. Bossellman, D. Callies, and J. Banta, supra note 125, at 212-235 for a discussion of all land-use regulation cases involving the taking issue decided in the early 1970's. The authors show that in a fairly high percentage of the cases the opinions show an increased sensitivity to environmental concerns.

167. 24 Cal. App.3d 311, 101 Cal. Rptr. 93 (1972).

168. 101 Cal. Rptr. 93, 96.

169. 284 N.E.2d 891 (Mass. 1972), cert. denied, 409 U.S. 1108 (1973).

amounted to a taking, the plaintiff presented evidence to show the value of the land was $431,000 before the ordinance change and $53,000 thereafter. The court found the ordinance to be a necessary protection against floods and, without an extensive discussion, found no taking of property. This case is the strongest yet decided upholding regulation of the flood plain, and two points need to be made concerning it: First, the ordinance itself was both comprehensive and carefully drawn; and second, the evidence showed that the area affected was subject to periodic flooding.

Factors Supporting Regulation

In this concluding part of the section on the taking issue we shall examine those factors that appear to improve a regulatory program's chances of success when challenged as a taking of property.

1. It is plain from the cases[170] that if the use of the land that is regulated can be characterized as a nuisance, or "nuisance-like," the chances of prevailing over a taking argument are excellent. "Nuisance" is a slippery term in the law, and depending upon the particular circumstances, flood plain regulations may be controlling either a public or private nuisance. Prosser has described a public nuisance as "a species of catch-all, low-grade criminal offense, consisting of an interference with the rights of the community at large, which may include anything from the blocking of a highway to a gaming-house or indecent exposure . . . ."[171] A private nuisance, on the other hand, is the use of his property by one landowner to unreasonably interfere with the use and enjoyment of the property of another landowner.[172] The control of both varieties of nuisance by government regulation is a long-standing use of the police power.[173] A showing that the unregulated use of the land in question would increase the flood hazard for other property owners, or would impair flood relief efforts, or would endanger a public water supply, would appear to be a strong argument that a nuisance is being controlled. Protection of the public health is an especially good argument here.

2. The cases indicate that the chances of success are improved if the regulation involved, even though locally adopted and administered, is part of a state or regional regulatory program.[174] Certainly this is one of the lessons of Just v. Marinette County.[175] There may be several

---

170. See cases cited at note 131 and the accompanying text.

171. Prosser, Private Action for Public Nuisance, 52 Va. L. Rev. 997, 999 (1966).

172. See Dunham, Flood Control Via the Police Power, 107 U. Pa. L. Rev. 1098, 1110 (1959).

173. Id at 1111-1112.

174. F. Bossellman, D. Callies, and J. Banta, supra note 125, at 229.

175. 65 Wisc.2d 7, 201 N.W.2d 761 (1972).

reasons for this greater judicial deference to state programs than to strictly local ones. Among the more prominent ones are the fear of arbitrariness and inexpert administration at the local level and the strength of a state policy represented by a state legislative program.

3. It is difficult to assess the influence of the necessity for land-use regulations in order to obtain certain federal benefits such as federal flood insurance on judicial attitudes towards the regulation. The only case involving the imposition of regulations as a condition to receiving federal assistance is Turner v. County of Del Norte, and it is impossible to determine the weight given to that factor in the decision. The federal flood insurance program can be used as evidence of federal concern about unregulated use of flood plain land, and the regulatory standards contained in federal regulations[176] can be offered as the minimum thought necessary for regulation of the flood plain.

4. The care with which the challenged regulations are drawn can be an important factor in whether they are held valid. The ordinances upheld in Spiegle v. Beach Haven,[177] in Turnpike Realty, and in Just, all appear to have been carefully drafted and are comprehensive in their coverage. It is most important to allow every profitable use of the property that would not create or aggravate the environmental hazard the regulation seeks to protect against.[178] If the only permitted uses are those functions usually performed by a public agency, then a court is more likely to find a taking.[179]

5. Regulation to protect natural storage areas of flood waters presents special problems. In order to retain its usefulness as a storage area, the land must be kept virtually in its natural state, leaving very few profitable uses. In Turnpike Realty the court upheld the preservation of a natural storage area, but in Morris County Land Company the New Jersey court invalidated regulations controlling a similar area. An alternative to regulation of natural storage areas is the acquisition of this land by a public agency where they are found critical for flood control. Such a program has been recommended for about 8,000 acres of natural storage areas in the Charles River watershed.[180]

6. Of great importance in upholding land-use regulations are the factual materials marshalled in their support. Bossellman, Callies, and Banta state in their study of the taking issue: "The absence of clear

---

176. See 24 C.F.R. Ch. X, § 1910.1 et seq. (Oct. 26, 1976).

177. 46 N.J. 479, 218 A.2d 129 (1966).

178. See F. Bossellman, D. Callies, and J. Banta, supra note 125, at 294-301.

179. See Morris County Land Improvement Co. v. Parsippany-Troy Hills, 40 N.J. 539, 193 A.2d 232 (1963).

180. Bergen, Experiences with Non-Structural Measures in the New England Division Corps of Engineers, in Implementation of Non-Structural Alternatives in Flood Damage Abatement 71 (Virginia Water Resources Research Center 1976).

theoretical guidelines makes the facts become much more important than the law. What goes into the balance is more important than the process of balancing. Both in drafting and defending land use regulations careful factual preparation is called for."[181] They strongly recommend using the Brandeis brief to set forth the underlying factual data when a regulatory program goes into litigation.[182] The cases clearly indicate that evidence that the land has been flooded in the past or is subject to periodic flooding is a major factor in getting the regulations held valid.[183] Other important facts would be the nature and importance of natural storage areas, increased flooding caused by development and the construction of pavement and other impermeable surfaces, effects of development on fish and wildlife, costs to the local government of extending streets and utilities into the flood plain, and the costs of providing disaster relief to flood victims. In short, facts must be developed to show that the regulation has substantial public benefits, and that if the area is not regulated substantial costs will be imposed on the public.

7. Once a land-use regulation is in litigation on the taking issue, the governmental unit supporting the regulation should not accept the landowner's basis of the value of the property, but should contend that the value of the land is its value in its natural state. The foundation for any taking challenge is the argument by the property owner that the effect of the regulation is to render his land valueless, or nearly so. What he regards as the land's value is usually not, however, its value in its current condition, especially is this true where floodplain land is concerned, but its value after it has been altered by dredging or filling, or by replacing or compacting the soil, or after completing dikes or channels. Thus, for example, when a landowner argues that his land unregulated is worth $200,000, but regulated is worth only $50,000, what he usually means is that it will be worth $200,000 once he completes his planned filling or diking operations. One way of completely deflating this argument is to contend that the court should accept as the value of the land its value in its current, natural state. This approach was accepted by the Wisconsin court in the Just case.

---

181. Supra note 125, at 293.

182. Id. at 284.

183. See Turner v. County of Del Norte and Turnpike Realty Co. v. Town of Dedham.

V. Review of Flood Plain Management Legislation from Other States

In the belief that something useful for North Carolina might be gained from an examination of the flood plain management legislation of some other states, we have reviewed the relevant statutes of five Eastern states. The statutes examined fall into two groups: those that take into account the requirements of the federal flood insurance program and those that do not. Maryland and Virginia are in the first category; Connecticut, Kentucky, and Wisconsin are in the second. The states in the second group are also similar in that the central feature of their legislation, like North Carolina's,[184] is authority at the state level to control development in flood plain areas.

In Wisconsin, the state Department of Natural Resources is required to adopt a flood plain zoning ordinance when a local government has not adopted a "reasonable and effective" ordinance by January 1, 1968.[185] The state-prepared ordinance must then be enforced by the local government concerned. The statute contains no directions concerning the content of the ordinance.

Kentucky authorizes its Department of Natural Resources and Environmental Protection to establish and enforce floodway regulations for all streams in the state.[186] A "floodway" is defined as "that area of a stream or watercourse necessary to carry off flood water as determined by" the secretary of the department.[187]

The Connecticut legislation, although similar in general objective to Kentucky's, is much more detailed and specific. The state Commissioner of Environmental Protection is directed to establish lines along tidal and inland waterways beyond which, in the direction of the waterway or flood prone area, no obstruction or encroachment may be placed except by permit issued by the Commissioner.[188] The Commissioner is to base the encroachment lines on the boundaries of the area that would be inundated by a flood similar in size to one or more recorded floods for the area, or on a flood computed by accepted methods applicable generally throughout the state or region.[189] In issuing and denying permits for encroachments within the delimited areas, the Commissioner is to take into account the effects of the proposed encroachments on the flood-carrying and water storage capacity of the waterways and flood plains and the prote tion and preservation of the natural resources and ecosystems of the state.[190] Existing structures within the encroachment lines are

---

184. See N.C. Gen. Stat. § 143-215.56 concerning delineation of a floodway by the Environmental Management Commission.

185. Wisc. Stat. Ann. § 87.30.

186. Ky. Rev. Stat. § 151.220.

187. Ky. Rev. Stat. § 151.100(7).

188. Conn. Gen. Stat. Ann. § 25-4a.

189. Conn. Gen. Stat. Ann. § 25-4b.

190. Conn. Gen. Stat. Ann. § 25-4a.

treated as nonconforming uses, but if such a structure is damaged to an extent of more than fifty per cent of its value it may be replaced or repaired only by permit from the Commissioner.[191]

The Maryland and Virginia statutes make an interesting contrast with those of the other three states and with each other. Both statutes are recent enactments and are plainly intended to enable the state to meet the requirements of the federal flood insurance program. The key definitions in the Maryland Flood Hazard Management Act of 1977,[192] including the definitions of the terms "floodway," "flood hazard area," and "100-year flood," are all in conformity with the federal regulations.[193] The state is given a strong role in the regulatory program, which is a two stage affair, with each stage being tied to certain maps and studies.

The state Department of Natural Resources is directed to prepare maps of all interim flood hazard areas by April 1, 1979.[194] A "flood hazard area" is defined as "an area of tidal or nontidal inundation resulting from a 100-year flood event . . . ."[195] It is important to note that neither the interim nor final maps are to be based on a precise floodway definition, such as the path of the 100-year flood, but rather are to show the more general "area subject to inundation" from either surface runoff or tidal waters.[196] This gives more regulatory flexibility and at the same time does not require the close mapping that a more precise floodway definition would require. After a map is prepared, the Department is required to hold a public hearing in each county in which an interim flood hazard is located, and after the hearing, the map must be adopted as a departmental regulation.[197] Within one year after a map is adopted as a departmental regulation, each city and county affected is required to adopt rules and regulations governing land uses within the designated flood hazard areas.[198] A proposed use within a flood hazard area may not be authorized by a local government unless the person proposing the use demonstrates that: (1) the use will be provided with adequate drainage; (2) support systems for the use such as water and sewerage facilities, road, and other utilities will be adequately flood proofed; (3) the use will not increase the surface water elevation of the 100-year flood event more than the increment of flood elevation specified by the Department; and (4) all permanent structures associated with the use must be flood proofed to withstand a 100-year flood.[199] If a local government so requests, the Department may prepare the necessary regulations for it.[200]

---

191. Conn. Gen. Stat. Ann. § 25-4d.
192. Md. Ann. Code §§ 8-9A01 through 8-9A11.
193. See Md. Ann. Code § 8-9A01.
194. Md. Ann. Code § 8-9A03.
195. Md. Ann. Code § 8-9A01(f).
196. Md. Ann. Code § 8-9A01(b) and (c).
197. Md. Ann. Code § 8-9A03.
198. Md. Ann. Code § 8-9A04.
199. Id.
200. Id.

The second stage of regulation is created by the requirement that the Department of Natural Resources divide the state into watersheds for the purpose of flood control planning by January 1, 1977.[201] Then, in cooperation with the Departments of State Planning and Agriculture, and local governments, it is to conduct studies of the watersheds that define, among other things, the magnitude and frequency of flood events based upon planned development. Also as a part of the watershed studies, the Department is to prepare flood hazard area maps that will supersede the maps of interim areas.[202] Once the new maps are prepared and the watershed studies are completed, the affected local governments must revise their land-use regulations to bring them into conformity with the new maps and also prepare a comprehensive flood management plan based upon the watershed studies. Among the management tools that may be used in the plans are dams, floodway delineations, public acquisition of land, and tax adjustment policy.[203] Plans for watersheds that cross local government boundaries must be approved by the Department.[204]

The Department is charged with the responsibility of reviewing changes in the character of the watersheds and to review periodically the flood hazard area maps and local flood control activities.[205] Also, the Department is required to assure that state construction projects meet the requirements of the act.[206]

The Maryland statutory program has much to recommend it. The state department concerned with other aspects of water resources is given a strong planning and regulatory role. The regulatory functions of local governments are not usurped, but they are required to be conducted within the framework of a state policy, and--it should be emphasized--local governments are required to carry out their regulatory roles. By tying studies and planning for flood control to watersheds, which will in many cases cross local government boundaries, the Maryland program aims at achieving a comprehensiveness not possible if each local government undertakes an uncoordinated management plan.

The Virginia program, established by the Flood Damage Reduction Act of 1977,[207] is also intended to conform to the requirements of the federal flood insurance program, but the planning and regulatory role given the state is less strong than in Maryland, and specific management and regulatory programs are not required of local governments. The statement of policy in the preamble sets the tone by emphasizing that zoning and other regulatory measures are a matter of local authority and concern.[208] The definitions follow the terminology of the federal

---

201. Md. Ann. Code § 8-9A05.
202. Id.
203. Id.
204. Id.
205. Md. Ann. Code § 8-9A06.
206. Id.
207. Code of Virginia §§ 62.1-44.108 through 62.1-44.112.
208. Code of Virginia § 62.1-44.109.

regulations.[209] The Act specifically directs that the flood plain management program be coordinated with the state's sedimentation control program[210] and then gives the State Water Control Board the following powers and duties regarding flood plain management:

A. Collect and distribute information about flooding and flood plain management;

B. Coordinate local, state, and federal flood plain management activities;

C. Assist local governments in their management of flood plain activities;

D. Insure that the management of flood plains will preserve the capacity of the flood plain to carry and discharge the 100-year flood;

E. Inspect and evaluate local flood plain management programs;

F. Coordinate and assist local governments in their applications for federal flood insurance; and

G. Establish guidelines that will meet the minimum requirements of the National Flood Insurance Program.[211]

Thus, the Virginia statute gives to the state agency important duties of coordination and technical assistance for local governments, but does not give it the planning and regulatory functions assigned the state by the Maryland statute.

---

209. See Code of Virginia § 62.1-44.110.
210. Code of Virginia § 62.1-44.111.
211. Code of Virginia § 62.1-44.112.